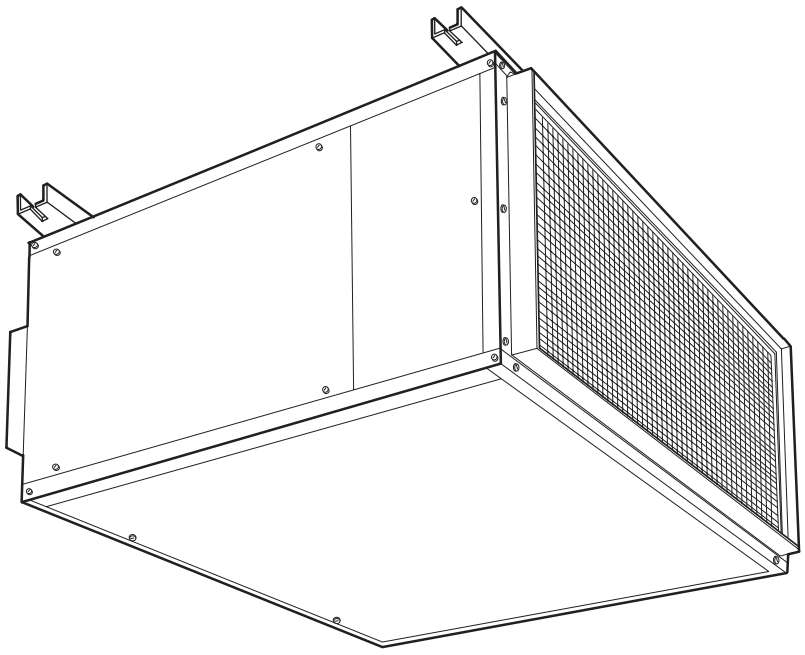
Product Data

42BH System Fan Coil Air Conditioner

800 to 4000 Cfm



Satisfy All Your Design Requirements with Carrier's Versatile 42BH Fan Coil Unit

- A selection of 6 sizes covers capacities from 800 to 4000 cfm
- Choice of motors, from 1/4 to 3 hp, eliminates oversizing
- Wide range of coil options for 2-pipe or 4-pipe system
- Optional DX coils with expansion valve and distributor

Features/Benefits

The 42BH fan coil unit provides year-round comfort air conditioning with central station operating economy.

A variety of coil options reduces first cost

Four- or 6-row cooling coils combine the capacities you need with the most efficient heat transfer surface. For 4-pipe systems, select either of two split-coil options. Coils consist of aluminum fins securely bonded to 1/2-in. OD seamless copper tubes. Each fin's aluminum collar ensures accurate control of the fin spacing, while completely covering the tubes to lengthen coil life. All coils also feature manual air vents, with automatic air vent available as an option.

Fan wheels are designed to provide low operating costs

The forward-curved, centrifugal, double-inlet fans are statically and dynamically balanced at the factory to minimize transmission of vibration to the building structure.

The belt-driven motor has a variable-pitch pulley which adjusts at the jobsite to accommodate limited ranges of air quantities and pressures.

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Motors are bolted to an adjustable platform for easy belt adjustment. Single-phase motors are resiliently mounted to reduce noise and vibration.

Complete factory assembly minimizes on-the-jobsite costs and problems

Compact, lightweight units are designed for easy mounting. One-in. duct flanges on discharge and 2-in. duct flanges on return are furnished standard. These integral duct flanges cut installation time and labor expense.

Durable construction means easy-to-maintain units

The 42BH casings are fabricated from heavy-gage steel, reinforced for maximum rigidity and structural strength. Removable side panels allow easy access for servicing interior components. One-inch matte surface, fiberglass thermal/acoustical insulation lines the fan coil cabinets to prevent sweating and to muffle sound transmission. The condensate pan extends under full coil surface to cut maintenance costs. Slide-in return-duct collar filter makes it possible to remove and replace the filter without disturbing return air ductwork.

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Model number nomenclature

42BH B 08 L

Model
42BH-
System Fan
Coil Unit

Design

Size

	Nominal Cfm
08	800
12	1200
16	1600
20	2000
30	3000
40	4000

Coil

Rows	
B	4, 2-Pipe
L	6, 2-Pipe
G	4/1, Opp End Conn.
H	4/1, Same End Conn.
J	4/2, Opp End Conn.
K	4/2 Same End Conn.
M	6/1 Opp End Conn.
N	6/1 Same End Conn.
P	6/2 Opp End Conn.
Q	6/2 Same End Conn.

NOTE: Refer to current 42 Series Master Prices for complete model definition, including motor, cfm and total static pressure.

Physical data

UNIT SIZE 42BH	08	12	16	20	30	40
NOMINAL CFM	800	1200	1600	2000	3000	4000
SHIPPING WT (lb) APPROX	136	165	205	325	413	583
FILTERS						
Number...Size (in.)	1...16 x 24	1...16 x 33	2...16 x 21 1/2	2...20 x 22	2...27 x 22	2...27 x 29
Face Area (sq ft)	2.6	3.6	4.8	6.1	8.2	10.9
COILS						
Size (in.)	15 x 20	15 x 29	15 x 39	18 x 40	27 x 40	27 x 54
Face Area (sq ft)	2.0	3.0	4.0	5.0	7.5	10.0
FANS						
Number...Size (in.)	1...9 x 6	1...9 x 9	1...10 x 8	1...12 x 12	1...15 x 15	2...12 x 12
Outlet Area (sq ft)	0.57	0.83	0.81	1.43	2.02	2.86
COPPER COIL CONN. 4 AND 6 ROW (in.) (Cooling)	7/8 OD	7/8 OD	1 1/8 OD	1 1/8 OD	1 5/8 OD	1 5/8 OD
COPPER COIL CONN. 1 AND 2 ROW (in.) (Heating)	5/8 OD	5/8 OD	5/8 OD	5/8 OD	5/8 OD	5/8 OD
COPPER DRAIN CONN. SIZES (in.)	7/8 OD	7/8 OD	7/8 OD	7/8 OD	7/8 OD	7/8 OD

Options and accessories

Coils — Choice of 2-pipe system with 4-row or 6-row cooling/heating coil, or 4-pipe system with 4-row or 6-row cooling and one-row or 2-row heating coil.

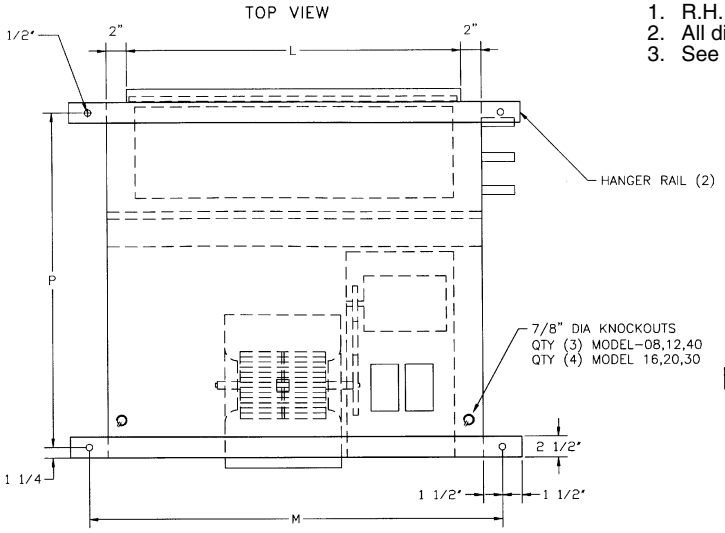
Automatic air vents — Optional factory-installed fiber washers, when dry, allow air in piping to pass through, automatically bleeding the system and eliminating the need to manually vent air.

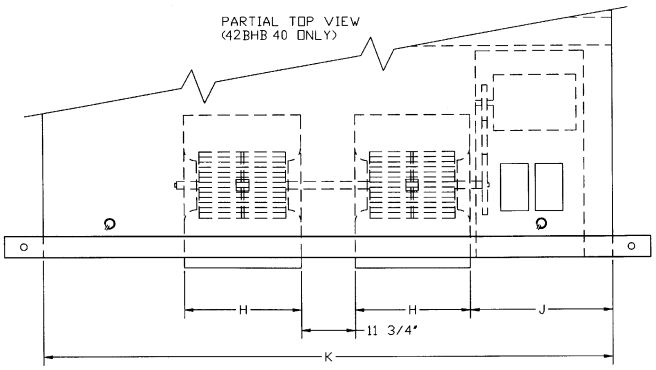
Filters — Factory-installed cleanable filters are available as an option in place of standard throwaway filters. Both throwaway and cleanable filters are available as field-installed accessories.

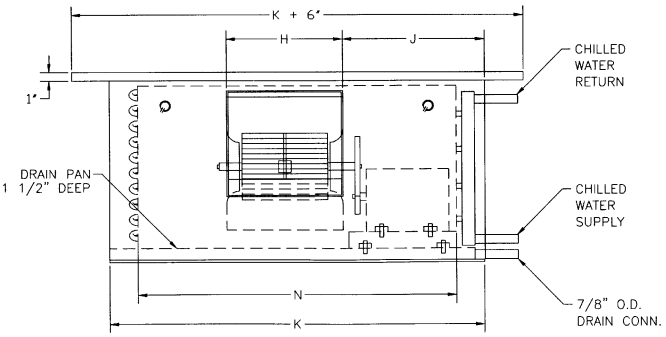
NOTE: Factory-supplied control packages are not available.

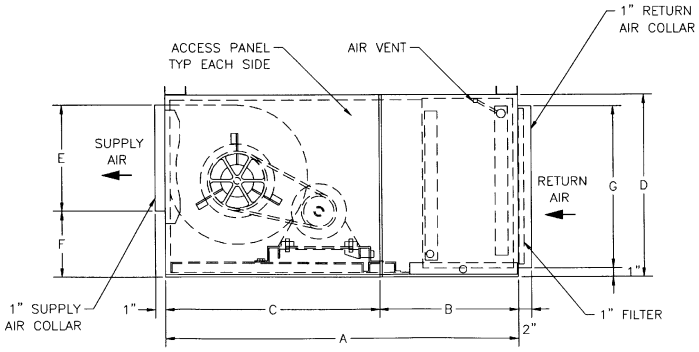
Dimensions

NOTES:
1. R.H. piping and motor drive shown. L.H. opposite.
2. All dimension ± 1/4.
3. See drawing 42BHB-203-1 Rev. A for coil connection dimensions.









UNIT	DIMENSIONS — INCHES														QUANTITY/UNIT		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Filters	Blower	Motor
42BH08	35	14 1/2	20 1/2	18 1/4	10 9/16	6 7/16	16	8 1/2	13 1/2	28	24	31	20	32 1/2	1	1	1
42BH12	35	14 1/2	20 1/2	18 1/4	10 9/16	6 7/16	16	12 1/16	14	37	33	40	29	32 1/2	1	1	1
42BH16	35	14 1/2	20 1/2	18 1/4	11 5/8	5 3/8	16	10 3/4	18 3/16	47	43	50	39	32 1/2	2	1	1
42BH20	38 1/2	14 1/2	24	22 1/4	13 11/16	7 5/16	20	15 7/8	16 1/8	48	44	51	40	36	2	1	1
42BH30	44	14 1/2	29 1/2	29 1/4	16 1/8	11 7/8	27	18 7/8	14 5/8	48	44	51	40	41 1/2	2	1	1
42BH40	38 1/2	14 1/2	24	29 1/4	13 11/16	14 5/16	27	15 7/8	13 1/2	62	58	65	54	36	2	2	1

Selection procedure

Example 1: Selection for specified total cooling

I Determine job requirements:

Given:
Total Cooling Load . . . . . 67.0 MBtuh
Sensible Cooling Load . . . . . 41.0 MBtuh
Air Delivery . . . . . 1800 cfm
Entering Air Temperature . . 75.0 F db, 65.0 F wb
Entering Water Temperature . . . . . 43 F
External Static Pressure . . . . . .0.30 in. wg
Maximum Chilled Water Flow Rate . . . . . 15.0 gpm

II Select unit based on required air delivery.

From Fan Performance table on page 20, select a unit that delivers required airflow. Model 42BH size 20 delivers 1800 cfm.

III Determine water temperature rise.

This step is used to determine the actual water temperature rise required to provide the specified cooling capacity.

(This can be done to meet either specified sensible or specified total capacity. For this example, we will determine water temperature rise required to meet the specified total capacity after it has been corrected to the rating curve capacity. The resulting rating curve sensible capacity will be determined in Step IV and then corrected to actual capacity. If the sensible capacity were the critical requirement, the reverse procedure would be followed.)

A. Determine the air delivery correction factors using actual unit air delivery (1800 cfm).

Enter the 42BH Cooling Capacity Correction Factors table, page 6, at 1800 cfm and find that a 42BH size 20 unit has a total heat (TH) factor of 0.94 and a sensible heat (SH) factor of 0.93.

B. Correct the specified total capacity to the required rating curve capacity.

$$\text{Rating Curve Capacity} = \frac{\text{Specified Total Cap.}}{\text{TH Factor}}$$

$$= \frac{67.0 \text{ MBtuh}}{0.94}$$

$$= 71.3 \text{ MBtuh}$$

C. Enter the cooling capacity curve for a size 20 unit with standard 4-row coil at 71.3 MBtuh and project vertically to the specified entering wet bulb (65 F). Project from this point horizontally to the right to the specified entering water temperature (43 F) and then vertically to read water temperature rise of 9.2 degrees F.

IV Determine the rating curve sensible capacity and the actual sensible capacity.

A. Enter the cooling curve at the intersection of total capacity (71.3 MBtuh) and entering wet bulb temperature (65 F). Read horizontally to the left to the specified dry bulb (75 F). Read down to the rating curve sensible capacity of 46.0 MBtuh.

B. Correct the rating curve capacity to actual capacity:
Actual Sensible Cooling
= SH x Rating Curve Sensible Cooling
= 0.93 (From Step III A) x 46.0 MBtuh
= 42.8 MBtuh

V Determine water flow and pressure drop.

A.

$$\text{Actual Gpm} = \frac{\text{Actual Total Cooling}}{.5 \times \text{Temp Rise}}$$

$$= \frac{67.0}{.5 \times 9.2} \text{ (From Step III C)}$$

$$= 14.6$$

B. Pressure drop is obtained from the curve on page 17 for the 4-row cooling coil and is 10 ft of water.

VI Find Leaving Air Dry Bulb (LDB) and Leaving Wet Bulb (LWB) Temperatures.

A.

$$\text{LDB} = \text{EDB} - \frac{\text{Actual Sensible MBtuh}}{\text{Actual Cfm} \times .00108}$$

$$= 75 - \frac{42.8 \text{ (Step IV B}}{1800 \times .00108}$$

$$= 53.0 \text{ F}$$

B. Leaving wet bulb is computed by referring to the Enthalpy at Saturation table on page 19. First determine that the enthalpy at saturation for the entering (h_{ent}) wet bulb of 65.0 is 30.06 Btu per lb of dry air.

$$h_{lvg} = h_{ent} - \frac{\text{Actual Total Capacity}}{.00445 \times \text{Actual Cfm}}$$

$$= 30.06 - \frac{67.0}{.00445 \times 1800}$$

$$= 21.69$$

Again referring to the table, the temperature corresponding to 21.69, by interpolation, is 52.4 F, which is the leaving wet bulb.

VII Verify that the selected unit will provide the required external static pressure of 0.30 in. wg with the selected coil, options, and ductwork.

A. Determine total static pressure. For an application with ductwork, the total static pressure is equal to the sum of the external static pressure, duct grilles, and component static pressures.

Assume for this example that the selected 42BH size 20 unit with 4-row cooling coil has a throwaway filter. Enter the 42BH Component Static Resistance table (page 19) at unit size 20, 1800 cfm, and find the static resistance (in. wg) for the following components:

4-Row Coil	0.31
Throwaway Filter	+ 0.04
Component Static Resistance	0.35
External Static	+ 0.30
	0.65

B. Refer to the Fan Performance table on page 20 and determine that a size 20 unit will deliver 1800 cfm at 1.0 total static pressure with a 3/4 hp motor and mid-range fan rpm of 800.

NOTE: The rpm's shown in the Fan Performance table are for reference only. The appropriate drives will be selected at the factory based on specified cfm and total static pressure.

Example 2: Determining unit capacity for specified water flow (gpm)

I Determine job requirements:

Given:
Total Cooling Load . . . . . 15.0 gpm
Sensible Cooling Load . . . . . 42 F
Air Delivery . . . . . 1800 cfm
Entering Air Temperature . . 75.0 F db, 65.0 F wb
External Static Pressure . . . . . 0.30 in. wg

II Make initial selection of unit based on required air delivery.

From Fan Performance table on page 20, select a unit that delivers required airflow. Model 42BH size 20 delivers 1800 cfm.

III Determine the air delivery correction factors using actual unit air delivery.

Enter the 42BH Cooling Capacity Correction Factors table (page 6) at 1800 cfm and find that a 42BH size 20 unit has a total heat (TH) factor or 0.94 and a sensible heat (SH) factor of 0.93.

IV Determine water temperature rise.

Arbitrarily select a total cooling capacity and apply the correction factor to obtain a beginning rating curve capacity.

$$\text{Rating Curve Capacity} = \frac{\text{Specified Total Capacity}}{\text{TH Factor}}$$

$$= \frac{64.0 \text{ MBtuh}}{0.94}$$

$$= 68.0 \text{ MBtuh}$$

Enter the cooling capacity curve for a size 20 unit with standard 4-row coil at 68.0 MBtuh and project vertically to the specified entering wet bulb (65 F). Project from this point horizontally to the right to the specified entering water temperature (42 F) and then vertically to read water temperature rise of 11.0 degrees F.

V Calculate actual water flow for the selected total capacity by using the following formula:

$$\text{Actual Gpm} = \frac{\text{Actual Total Cooling}}{.5 \times \text{Temp Rise}}$$

$$= \frac{64.0}{0.5 \times 11.0} \quad \text{(From Step IV)}$$

$$= 11.6$$

Since 11.6 is less than the specified gpm, another higher total cooling capacity must be selected and Steps IV and V repeated until the resulting actual gpm matches the specified gpm.

VI Determine rating curve sensible capacity and the actual sensible capacity.

Once the specified gpm is matched and the total cooling capacity is known, the actual sensible capacity may be determined using Step IV of Example 1. The water pressure drop may be read from the water pressure drop curve.

Example 3: Heating selection

I Determine job requirements. (Unit previously selected for cooling.)

Given:
Heating Load . . . . . 54.0 MBtuh
Entering Water Temperature . . . . . 110 F
Entering Air Temperature . . . . . 70 F db
Hot Water Flow Rate (same as cooling) . . 14.6 gpm

II Determine actual heating capacity.

Enter Heating Capacity curve (page 21) for 42BH size 20 unit with a 4-row coil at 14.6 gpm and find 168.0 MBtuh rated heating capacity.

Refer to Correction Factors tables on page 6.

Actual Heating Capacity = Rated Capacity
x SH Factor (from Cooling Capacity Correction Factors)
x Hot Water Capacity Correction Factor
= 168.0 x 0.93 x 0.363
= 56.7

This slightly exceeds required heating capacity of 54.0 MBtuh.

IMPORTANT: Check to ensure leaving air temperature does not exceed 104 F.

$$\text{Leaving Air Temp} = \frac{\text{MBtuh} \times 1000}{1.08 \times \text{cfm}} + \text{Entering Air Temp}$$

$$= \frac{56.7 \times 1000}{1.08 \times 1800} + 70$$

$$= 99 \text{ F}$$

Leaving air temperature is within the limit. (Consult factory for special motors if the temperature exceeds the limit.)

Performance data

42BH COOLING CAPACITY CORRECTION FACTORS

ACTUAL CFM	UNIT SIZE 42BH											
	08		12		16		20		30		40	
	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
600	0.86	0.82	—	—	—	—	—	—	—	—	—	—
700	0.94	0.91	—	—	—	—	—	—	—	—	—	—
800	1.00	1.00	—	—	—	—	—	—	—	—	—	—
900	1.06	1.09	0.88	0.82	—	—	—	—	—	—	—	—
1000	1.12	1.18	0.92	0.88	—	—	—	—	—	—	—	—
1100	—	—	0.96	0.94	—	—	—	—	—	—	—	—
1200	—	—	1.00	1.00	0.88	0.84	—	—	—	—	—	—
1300	—	—	1.04	1.06	0.91	0.88	—	—	—	—	—	—
1400	—	—	1.06	1.10	0.94	0.92	—	—	—	—	—	—
1500	—	—	—	—	0.97	0.96	—	—	—	—	—	—
1600	—	—	—	—	1.00	1.00	0.89	0.85	—	—	—	—
1700	—	—	—	—	1.03	1.03	0.92	0.90	—	—	—	—
1800	—	—	—	—	1.06	1.08	0.94	0.93	—	—	—	—
1900	—	—	—	—	1.09	1.12	0.97	0.96	—	—	—	—
2000	—	—	—	—	1.12	1.16	1.00	1.00	—	—	—	—
2100	—	—	—	—	—	—	1.02	1.04	—	—	—	—
2200	—	—	—	—	—	—	1.06	1.07	—	—	—	—
2400	—	—	—	—	—	—	1.09	1.11	0.89	0.85	—	—
2600	—	—	—	—	—	—	1.12	1.14	0.92	0.90	—	—
2800	—	—	—	—	—	—	—	—	0.96	0.95	—	—
3000	—	—	—	—	—	—	—	—	1.00	1.00	—	—
3200	—	—	—	—	—	—	—	—	1.04	1.05	—	—
3400	—	—	—	—	—	—	—	—	1.08	1.10	0.92	0.89
3600	—	—	—	—	—	—	—	—	—	—	0.94	0.93
3800	—	—	—	—	—	—	—	—	—	—	0.97	0.96
4000	—	—	—	—	—	—	—	—	—	—	1.00	1.00
4200	—	—	—	—	—	—	—	—	—	—	1.02	1.04

SH — Sensible Heat **TH —** Total Heat

NOTE: Use Sensible Heat correction factors when calculating heating capacity.

ALTITUDE COOLING CORRECTION FACTORS

ELEVATION (ft)	TOTAL HEAT	SENSIBLE HEAT
1000	0.99	0.96
2000	0.98	0.93
3000	0.97	0.89
4000	0.96	0.86
5000	0.94	0.83
6000	0.93	0.80

DIRECT EXPANSION (DX) CORRECTION FACTORS

% OF NOMINAL CFM	CORRECTION FACTOR	
	Total	Sensible
80	0.95	0.93
90	0.97	0.96
100	1.00	1.00
110	1.02	1.04
120	1.05	1.08

Consult factory for values outside of table.

DX Total Capacity (MBtuh) = Base TH x Total Correction Factor

DX Sensible Capacity (MBtuh) = Base SH x Sensible Correction Factor

% of Nominal Cfm = Actual Cfm (from Fan Performance table) ÷ Nominal Cfm

42BH HOT WATER CAPACITY CORRECTION FACTORS

ENTERING AIR TEMPERATURE (F)	ENTERING WATER TEMPERATURE (F)										
	100	110	120	130	140	150	160	170	180	190	200
50	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091	1.182	1.273	1.364
55	0.409	0.500	0.591	0.682	0.773	0.864	0.955	1.045	1.136	1.227	1.318
60	0.363	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091	1.182	1.273
65	0.318	0.409	0.500	0.591	0.682	0.773	0.864	0.955	1.045	1.136	1.227
70	0.272	0.363	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091	1.182
75	0.227	0.318	0.409	0.500	0.591	0.682	0.773	0.864	0.955	1.045	1.136
80	0.182	0.272	0.363	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091

NOTES:

1. Leaving air temperature not to exceed 104 F with standard motor.
2. Base capacity ratings based on 180 F entering water temperature and 70 F entering air temperature.
3. Hot Water Heating Capacity (MBtuh) = Rated Heating Capacity x Hot Water Capacity Correction Factor x SH (SH value found in Cooling Capacity Correction Factors table).

42BH NOMINAL COOLING CAPACITIES

UNIT SIZE 42BH	NOMINAL CFM	COIL ROWS	EWT	GPM	COOLING*	
					Total Capacity (MBtuh)	Sensible Capacity (MBtuh)
08	800	4	40	6.6	33.0	21.2
			45	4.9	24.4	17.7
			50	3.0	15.0	14.6
		6	40	7.8	39.0	24.7
			45	6.0	30.0	21.4
			50	4.2	21.0	18.5
12	1200	4	40	10.4	52.0	31.0
			45	7.9	39.5	26.0
			50	5.2	26.0	22.0
		6	40	12.6	63.0	37.5
			45	9.8	49.0	32.5
			50	7.0	35.0	27.0
16	1600	4	40	14.2	71.0	44.5
			45	10.2	51.0	38.0
			50	6.2	31.0	31.0
		6	40	16.2	81.0	50.0
			45	11.9	59.5	42.0
			50	7.5	37.5	33.0
20	2000	4	40	18.8	94.0	58.0
			45	13.4	67.0	48.0
			50	8.6	43.0	39.0
		6	40	21.0	105.0	63.5
			45	16.0	80.0	52.2
			50	11.0	55.0	42.0
30	3000	4	40	25.6	128.0	83.0
			45	18.4	92.0	70.5
			50	13.9	69.5	56.7
		6	40	32.9	164.5	98.0
			45	25.6	128.5	84.0
			50	18.5	92.5	68.0
40	4000	4	40	36.4	182.0	116.5
			45	28.0	140.0	100.0
			50	19.2	96.0	80.0
		6	40	44.4	222.0	134.0
			45	34.9	174.5	112.5
			50	25.6	128.0	92.5

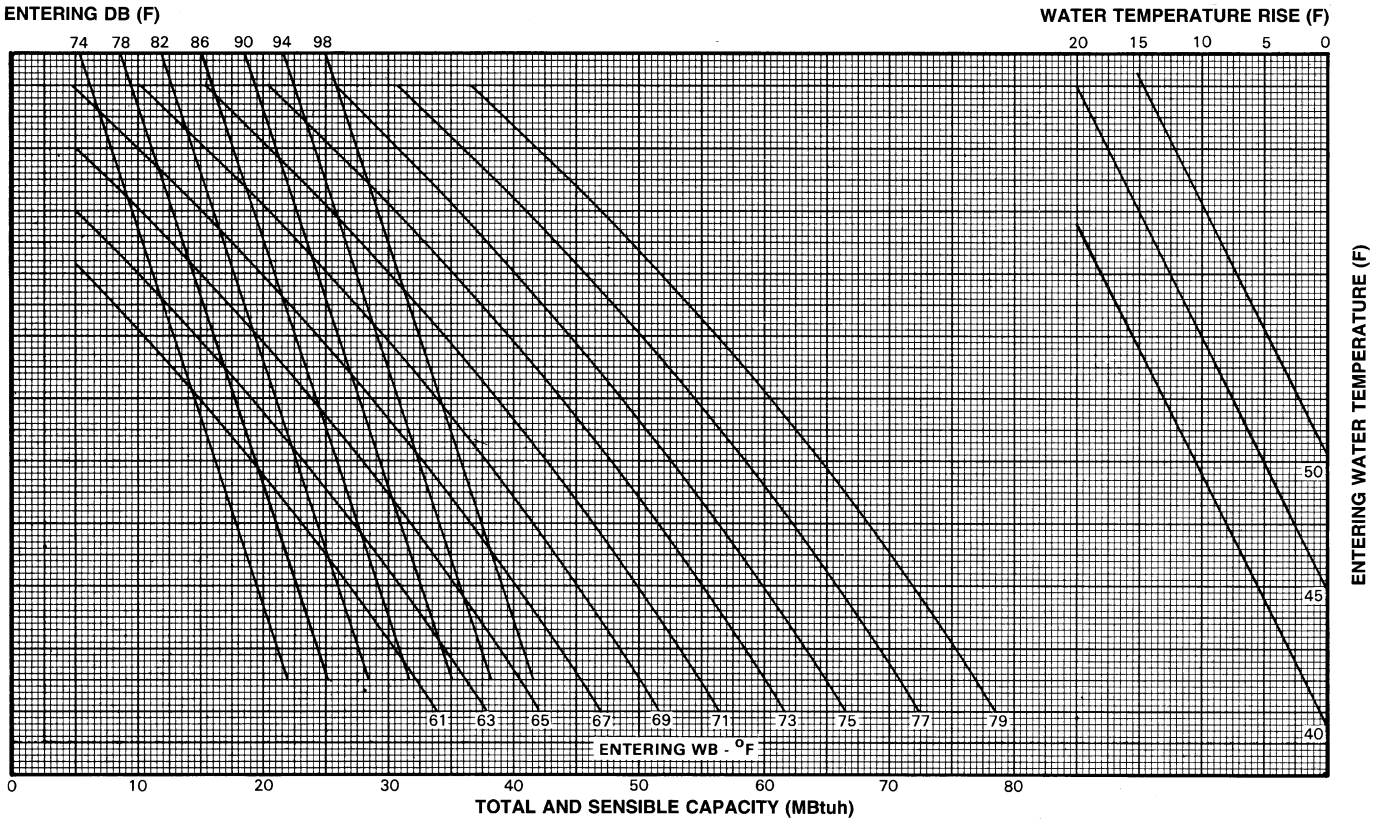
EWT — Entering Water Temperature
*Based on entering air temperature of 67 F wb, 80 F db and temperature rise of 10 degrees F.

NOTES:
1. All ratings at sea level.
2. Ratings in accordance with ARI (Air Conditioning & Refrigeration Institute).

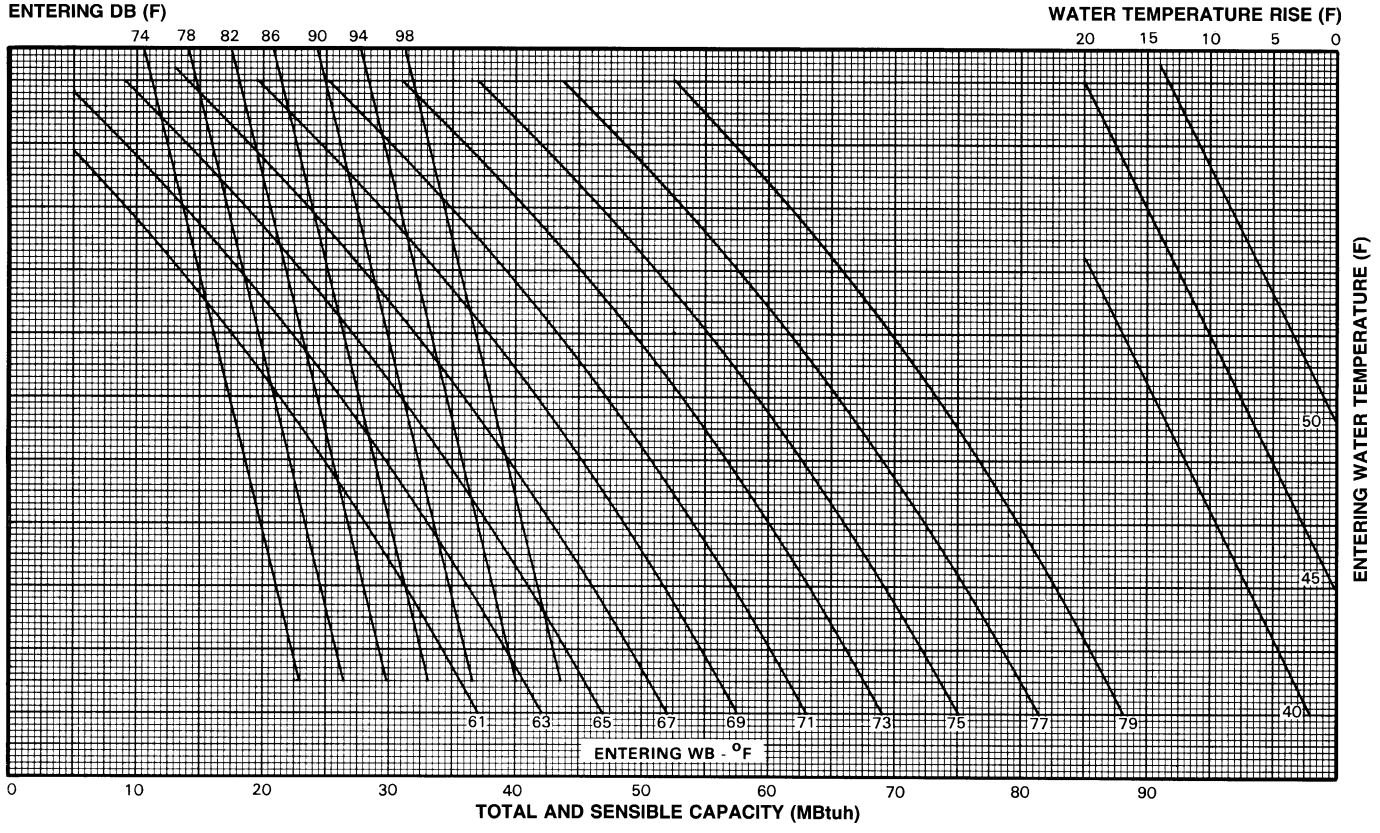
Performance data (cont)

COOLING CAPACITY 42BH08

4-ROW — 800 CFM

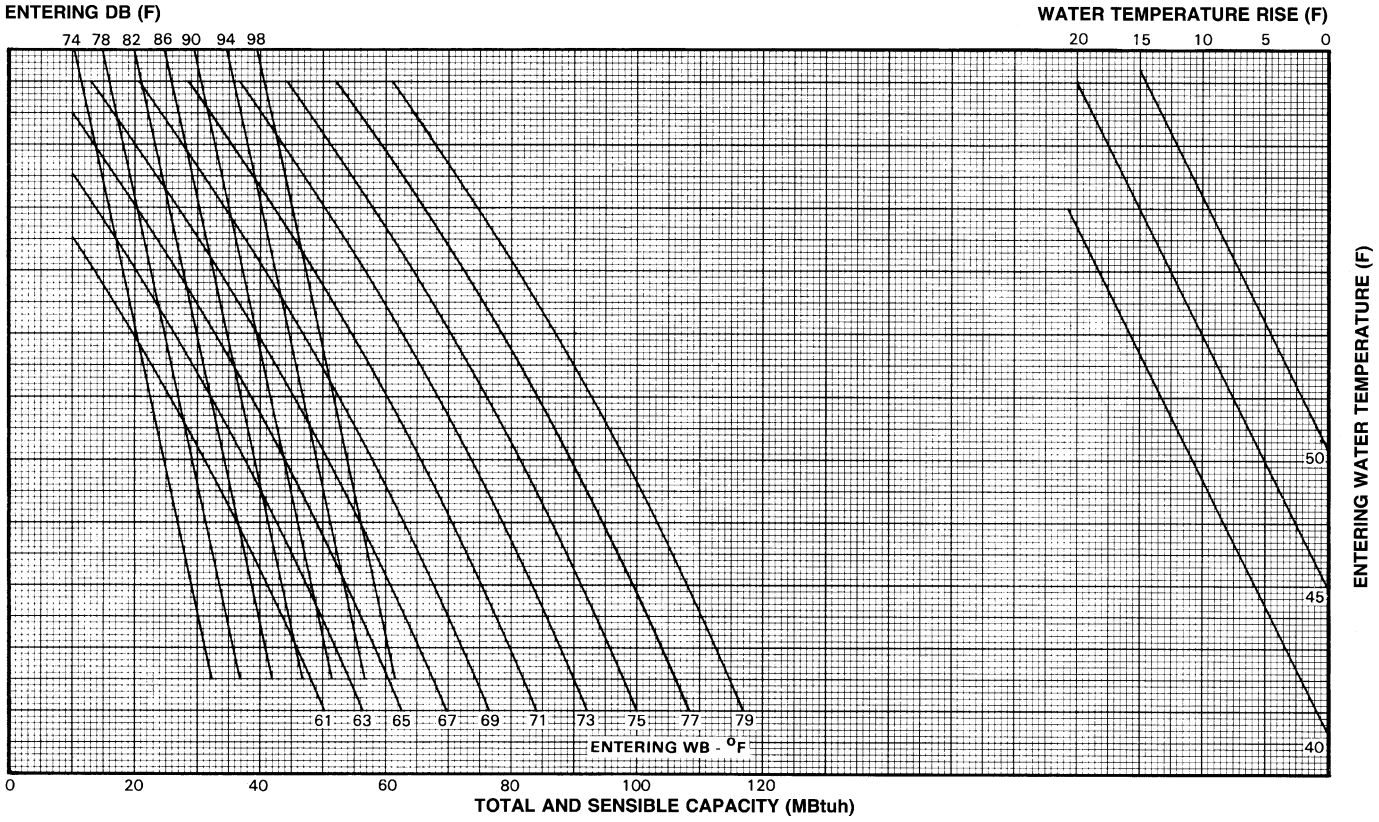

ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
50
45
40
ENTERING WATER TEMPERATURE (F)
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
0 10 20 30 40 50 60 70 80
TOTAL AND SENSIBLE CAPACITY (MBtuh)

6-ROW — 800 CFM

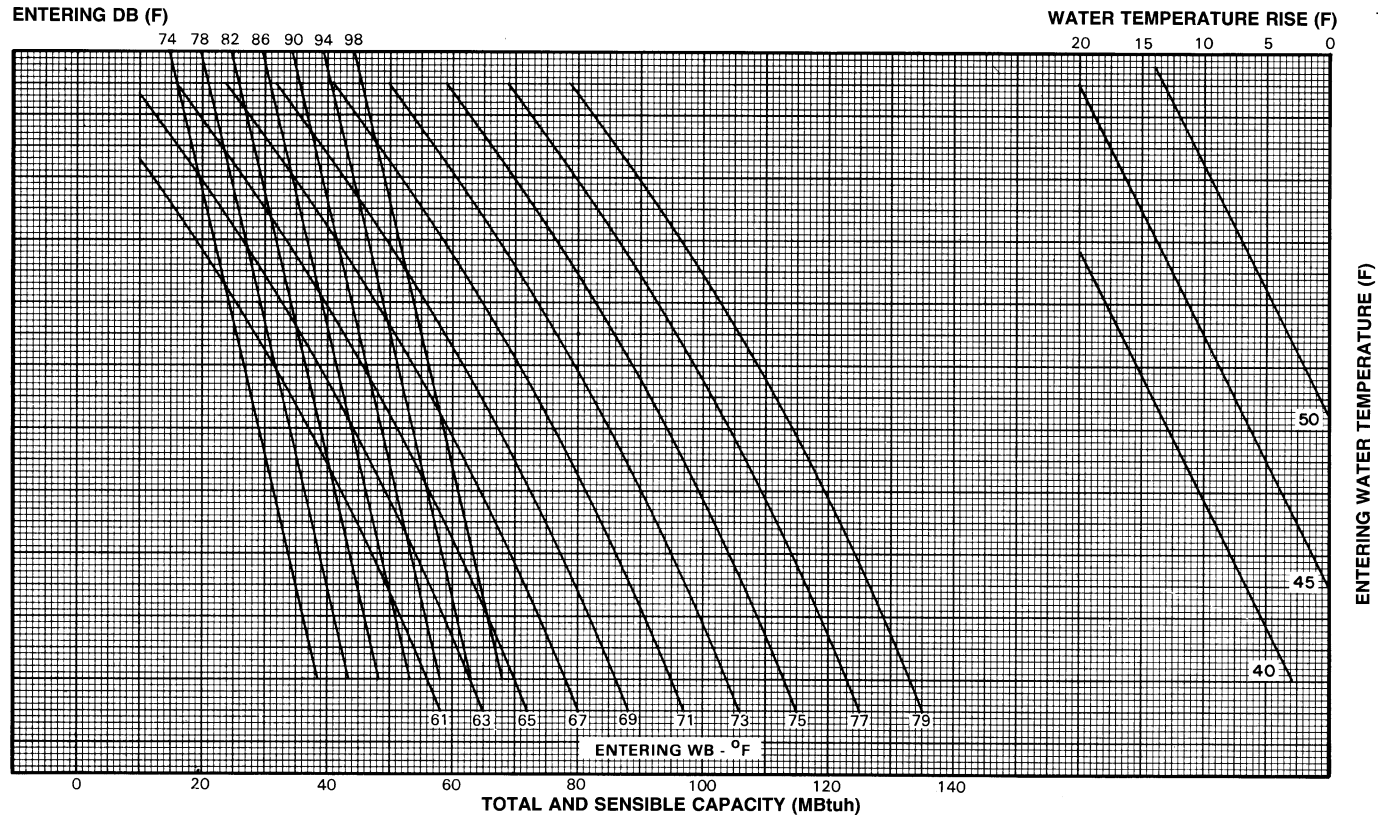

ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
50
45
40
ENTERING WATER TEMPERATURE (F)
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
0 10 20 30 40 50 60 70 80 90
TOTAL AND SENSIBLE CAPACITY (MBtuh)

COOLING CAPACITY 42BH12

4-ROW — 1200 CFM


ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
50
45
40
ENTERING WATER TEMPERATURE (F)
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
0 20 40 60 80 100 120
TOTAL AND SENSIBLE CAPACITY (MBtuh)

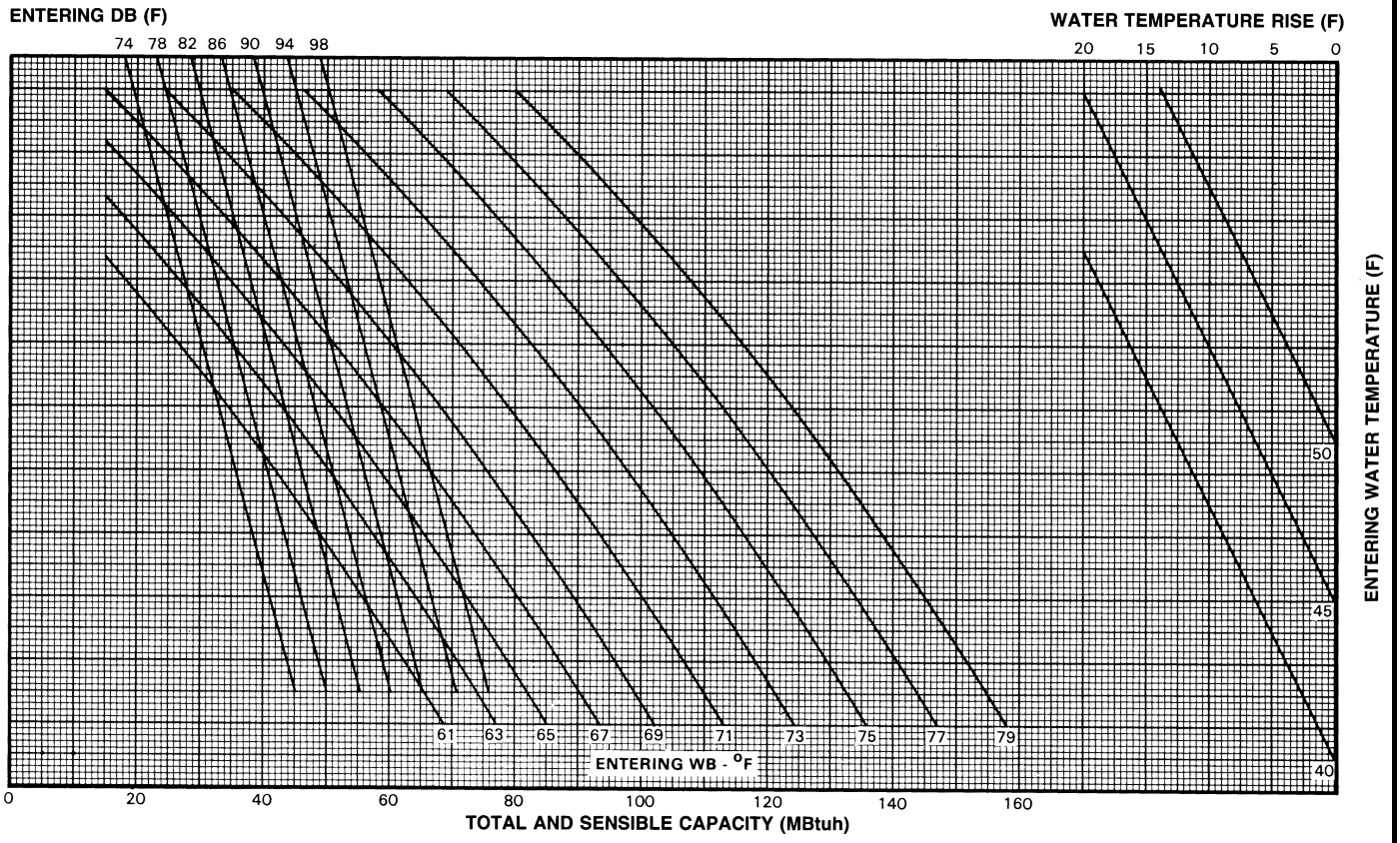
6-ROW — 1200 CFM


ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
50
45
40
ENTERING WATER TEMPERATURE (F)
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
0 20 40 60 80 100 120 140
TOTAL AND SENSIBLE CAPACITY (MBtuh)

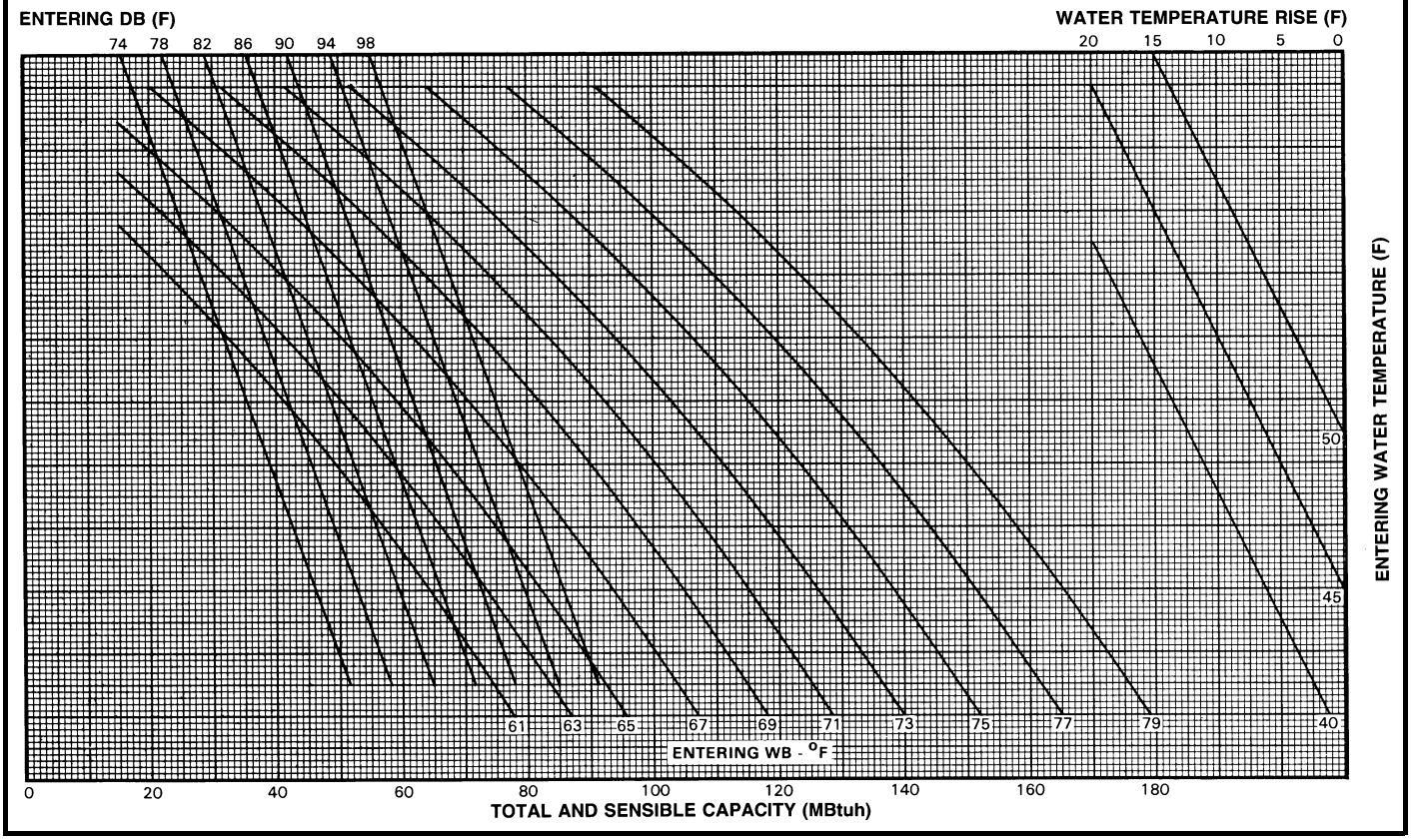
Performance data (cont)

COOLING CAPACITY 42BH16

4-ROW — 1600 CFM

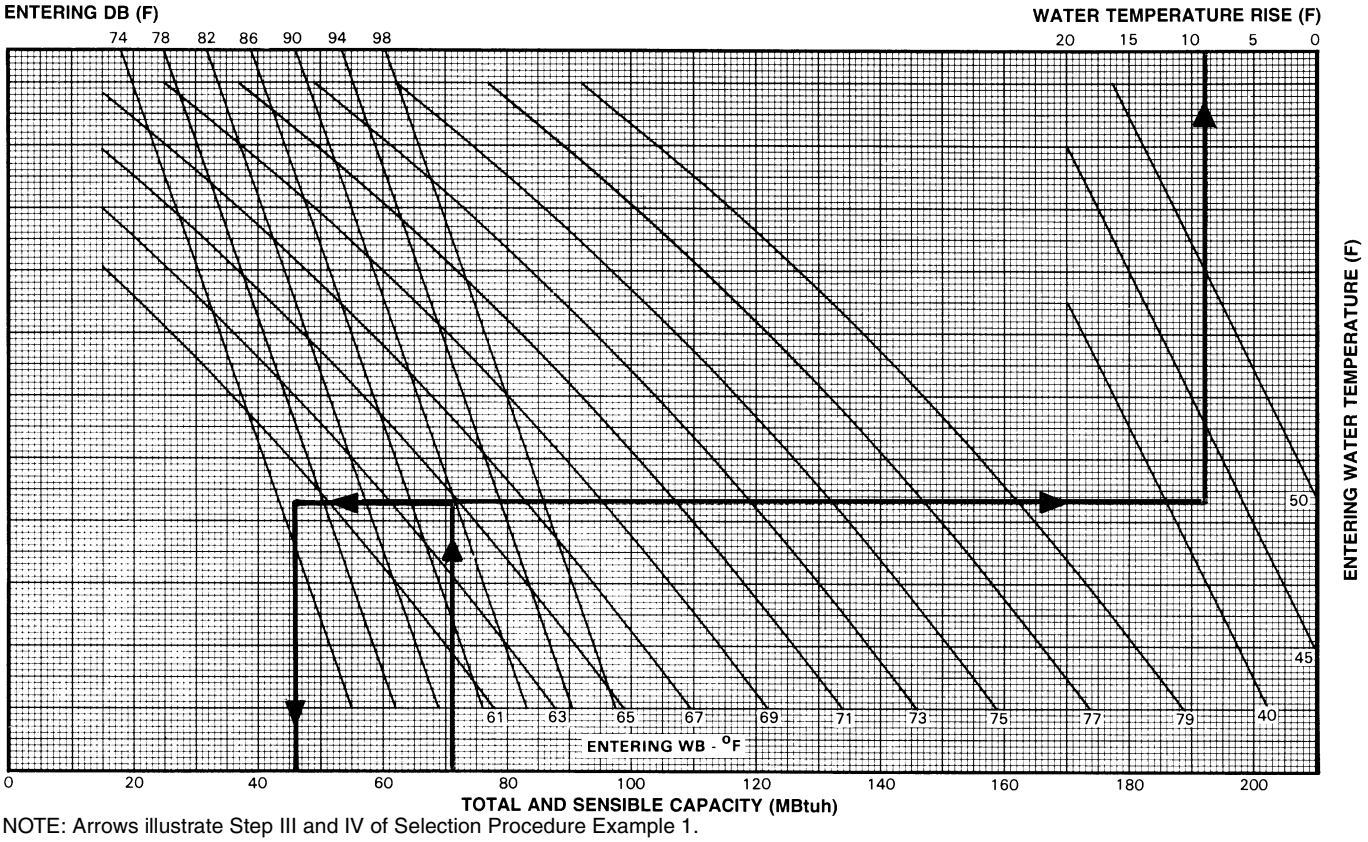

ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
50
45
40
ENTERING WATER TEMPERATURE (F)
0 20 40 60 80 100 120 140 160
TOTAL AND SENSIBLE CAPACITY (MBtuh)

6-ROW — 1600 CFM


ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
50
45
40
ENTERING WATER TEMPERATURE (F)
0 20 40 60 80 100 120 140 160 180
TOTAL AND SENSIBLE CAPACITY (MBtuh)

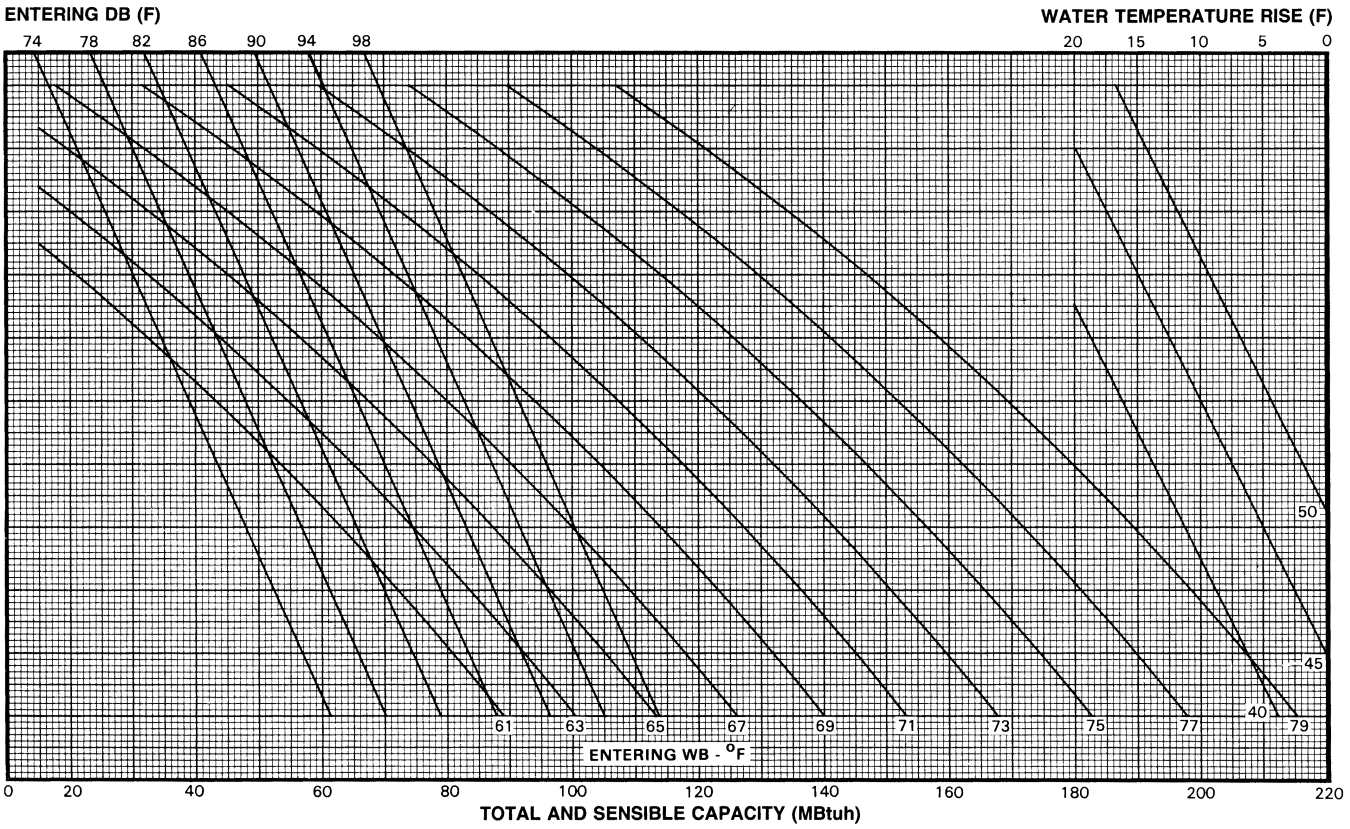
COOLING CAPACITY 42BH20

4-ROW — 2000 CFM


ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
50
45
40
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
0 20 40 60 80 100 120 140 160 180 200
TOTAL AND SENSIBLE CAPACITY (MBtuh)
ENTERING WATER TEMPERATURE (F)

NOTE: Arrows illustrate Step III and IV of Selection Procedure Example 1.

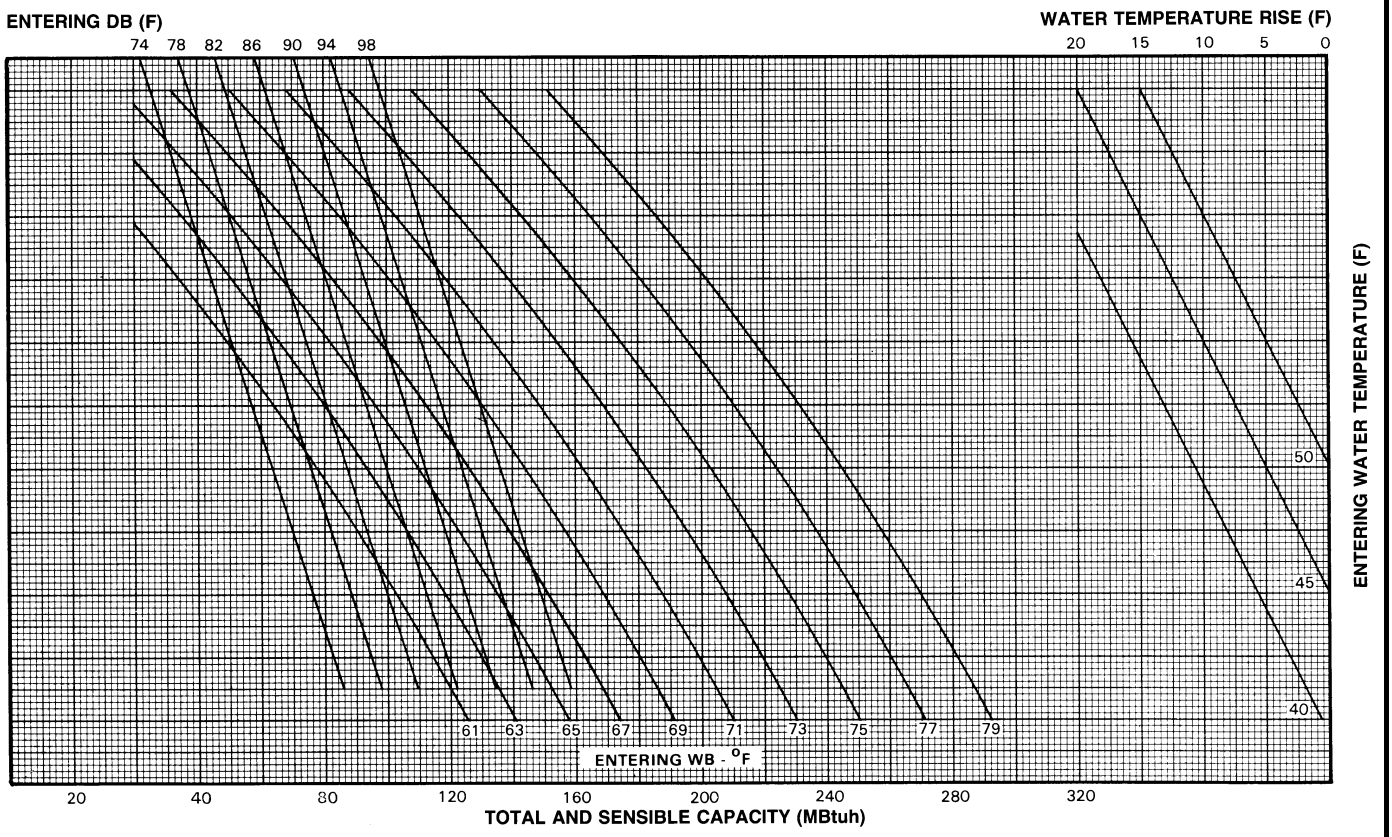
6-ROW — 2000 CFM


ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
50
45
40
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
0 20 40 60 80 100 120 140 160 180 200 220
TOTAL AND SENSIBLE CAPACITY (MBtuh)
ENTERING WATER TEMPERATURE (F)

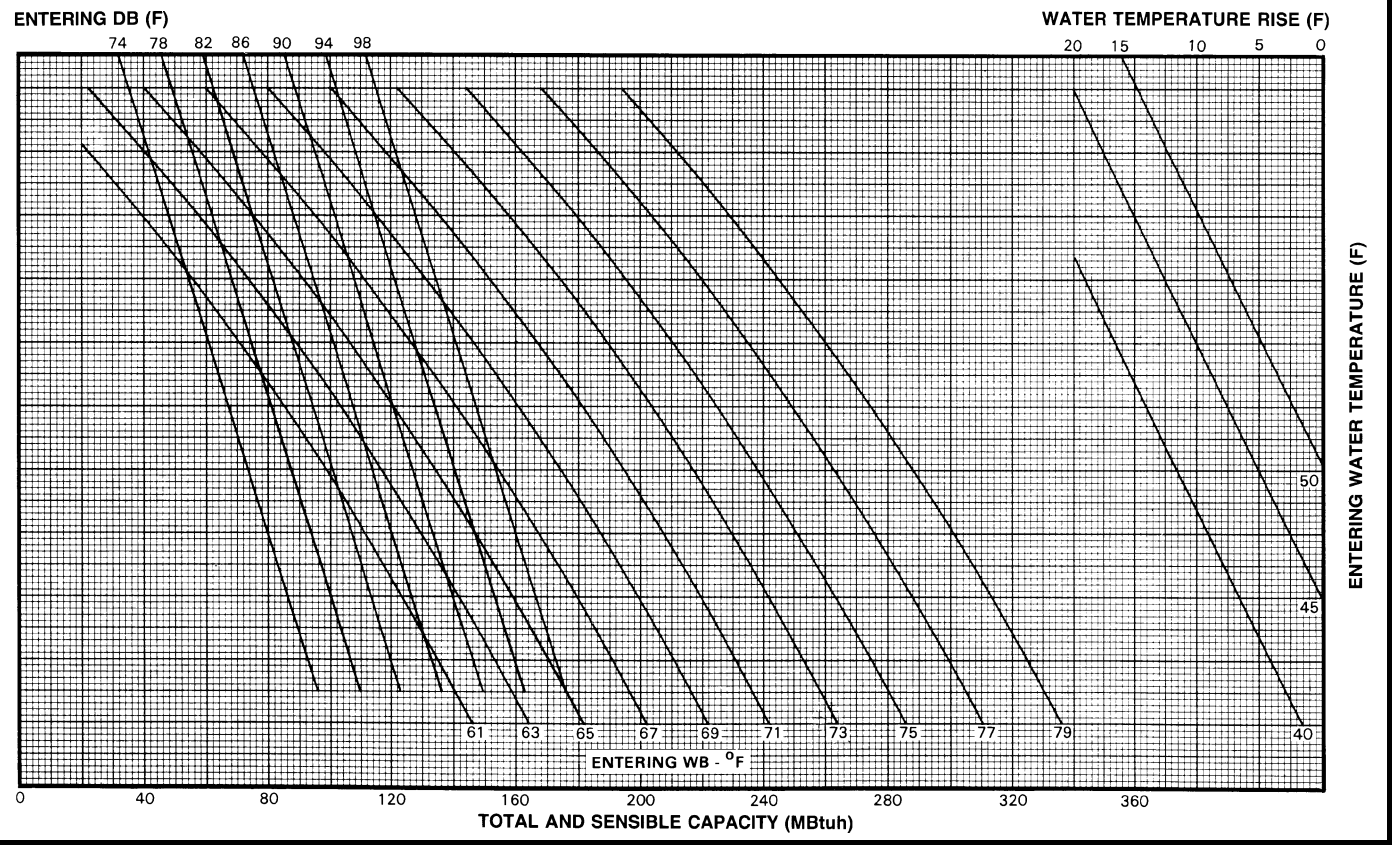
Performance data (cont)

COOLING CAPACITY 42BH30

4-ROW — 3000 CFM

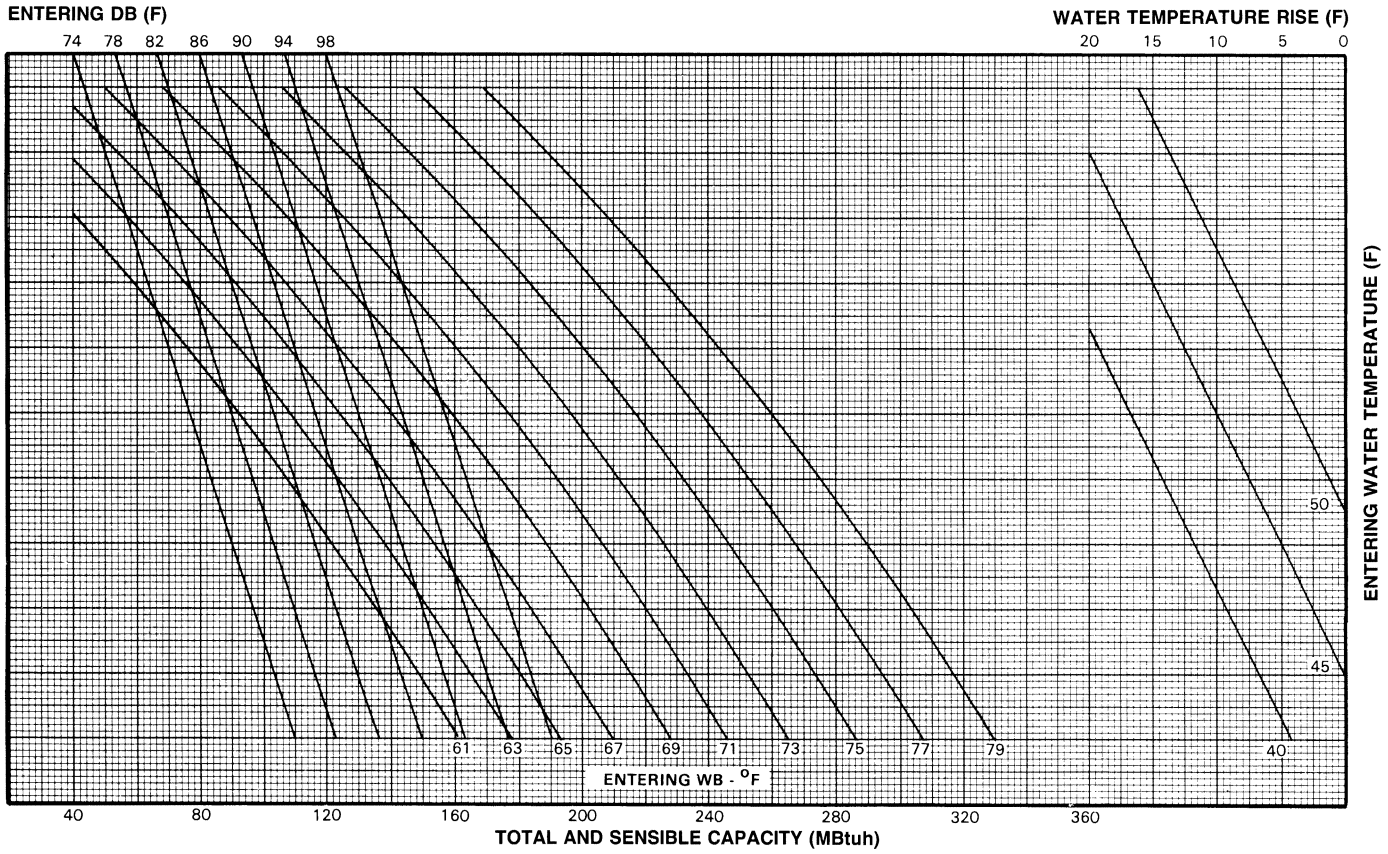

ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
50
45
40
ENTERING WATER TEMPERATURE (F)
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
20 40 80 120 160 200 240 280 320
TOTAL AND SENSIBLE CAPACITY (MBtuh)

6-ROW — 3000 CFM

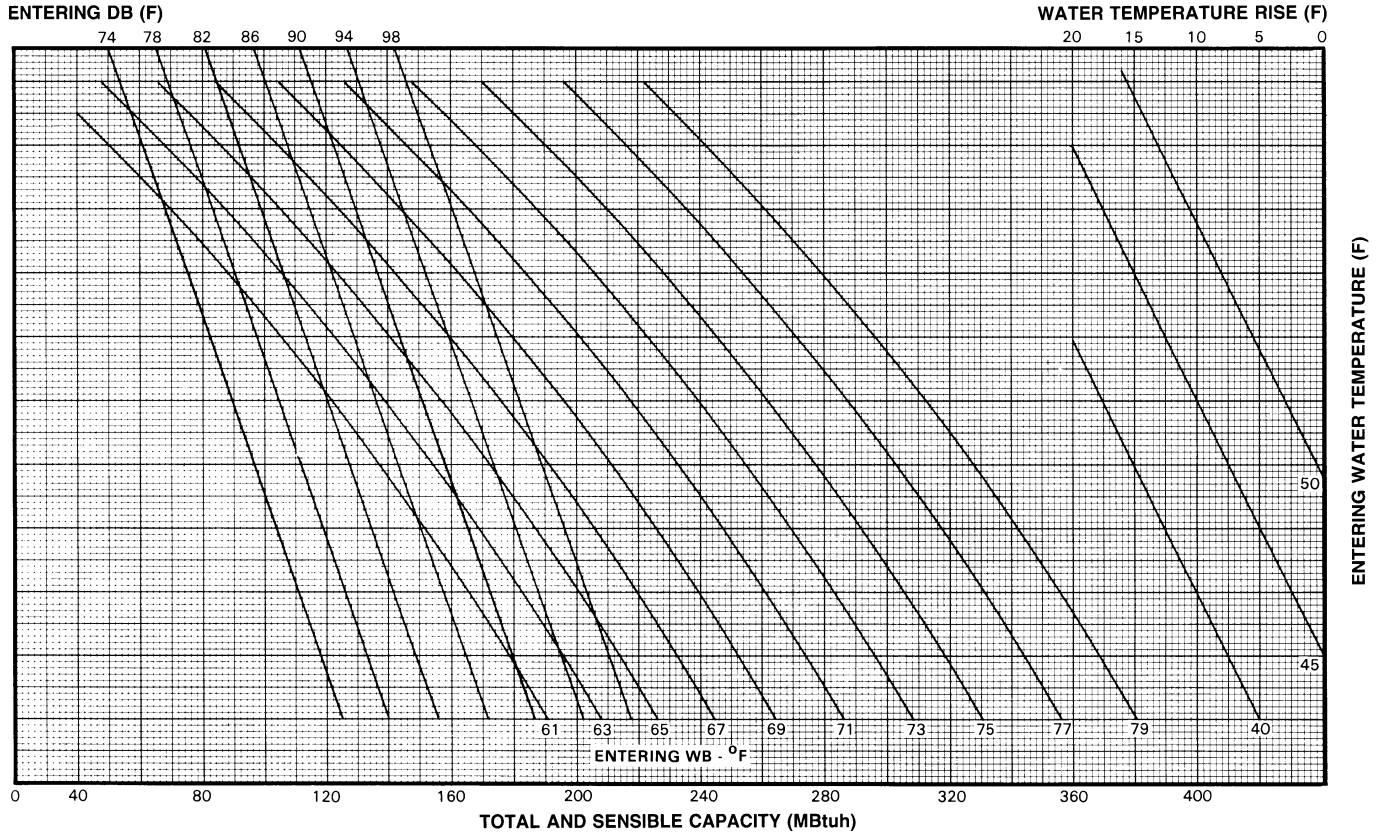

ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
50
45
40
ENTERING WATER TEMPERATURE (F)
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
0 40 80 120 160 200 240 280 320 360
TOTAL AND SENSIBLE CAPACITY (MBtuh)

COOLING CAPACITY 42BH40

4-ROW — 4000 CFM


ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
ENTERING WATER TEMPERATURE (F)
50
45
40
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
40 80 120 160 200 240 280 320 360
TOTAL AND SENSIBLE CAPACITY (MBtuh)

6-ROW — 4000 CFM


ENTERING DB (F)
74 78 82 86 90 94 98
WATER TEMPERATURE RISE (F)
20 15 10 5 0
ENTERING WATER TEMPERATURE (F)
50
45
40
61 63 65 67 69 71 73 75 77 79
ENTERING WB - °F
0 40 80 120 160 200 240 280 320 360 400
TOTAL AND SENSIBLE CAPACITY (MBtuh)

Performance data (cont)

DIRECT EXPANSION (DX) BASE COOLING CAPACITIES* (MBtuh)
4-ROW COIL

UNIT SIZE 42BH	CONNECTION SIZE (in.)		CFM	R-22 SUCTION TEMP (F)	ENTERING AIR TEMPERATURE (F) — db/wb											
					75/63		80/63		75/67		80/67		80/71		85/71	
	Liquid	Suction			TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
08	3/8	5/8	600	40	17.1	13.0	17.8	16.1	21.8	12.0	22.1	15.0	27.0	13.8	27.2	16.9
				45	12.7	11.0	14.2	14.1	17.1	10.0	17.4	13.0	22.4	12.0	22.6	15.0
				50	8.5	8.5	11.1	11.1	11.9	7.9	12.6	11.0	17.2	10.0	17.5	13.1
			800	40	20.0	15.9	21.0	19.9	25.2	14.3	25.5	18.2	30.9	16.4	31.2	20.3
				45	15.0	13.6	16.8	16.8	19.9	12.1	20.2	16.0	25.8	14.4	26.1	18.3
				50	10.5	10.5	13.7	13.7	13.8	9.8	15.0	13.7	19.8	12.2	20.3	16.1
			900	40	21.1	17.2	22.4	21.5	26.6	15.4	26.9	19.6	32.5	17.6	32.8	21.8
				45	16.0	14.8	18.2	18.2	21.0	13.1	21.4	17.4	27.2	15.5	27.5	19.8
				50	11.4	11.4	14.9	14.9	14.6	10.6	16.0	15.0	21.0	13.2	21.5	17.5
12	1/2	7/8	1000	40	29.2	21.9	30.0	27.0	37.4	20.4	37.8	25.4	46.6	23.8	47.0	28.8
				45	21.3	18.3	23.8	23.4	29.0	16.8	29.5	21.8	38.2	20.3	38.7	25.3
				50	14.2	14.2	18.5	18.5	20.1	13.2	21.1	18.4	29.1	16.8	29.6	21.8
			1200	40	32.5	25.0	33.6	30.9	41.5	23.0	41.9	28.8	51.6	26.7	52.0	32.5
				45	23.8	21.0	26.2	26.2	32.2	19.1	32.7	25.0	42.3	23.0	42.8	28.8
				50	16.3	16.3	21.3	21.3	22.2	15.2	23.6	21.2	32.2	19.1	32.7	25.0
			1300	40	33.9	26.4	35.3	32.7	43.3	24.2	43.8	30.4	53.7	28.1	54.2	34.3
				45	24.9	22.3	27.7	27.7	33.6	20.2	34.2	26.4	44.1	24.2	44.6	30.4
				50	17.3	17.3	22.5	22.5	23.2	16.1	24.8	22.4	33.6	20.2	34.1	26.5
16	5/8	7/8	1400	40	38.6	29.7	40.2	36.8	49.7	27.5	50.2	34.4	62.0	32.0	62.6	39.0
				45	28.2	24.9	31.0	31.0	38.3	22.7	38.9	29.7	50.6	27.4	51.2	34.4
				50	19.2	19.2	25.1	25.1	26.0	17.9	28.0	25.1	38.2	22.7	38.9	29.7
			1600	40	41.7	32.7	43.6	40.6	53.4	30.0	54.0	37.8	66.5	34.8	67.2	42.6
				45	30.5	27.6	34.2	34.2	41.2	24.9	41.8	32.7	54.4	30.0	55.0	37.7
				50	21.1	21.1	27.7	27.7	28.0	19.8	30.3	27.7	41.0	24.9	41.8	32.8
			1800	40	44.4	35.4	46.7	44.1	56.8	32.3	57.5	40.9	70.6	37.4	71.3	45.9
				45	32.7	30.0	37.1	37.1	43.8	26.9	44.5	35.5	57.7	32.3	58.4	40.9
				50	23.0	23.0	30.1	30.1	29.7	21.5	32.5	30.2	43.6	27.0	44.5	35.7
20	5/8	7/8	1800	40	47.8	37.3	49.9	46.3	61.0	34.1	61.7	43.0	75.6	39.5	76.3	48.3
				45	35.2	31.5	39.1	39.1	47.4	28.5	48.2	37.3	62.3	34.2	63.0	43.0
				50	24.3	24.3	31.8	31.8	32.6	22.7	35.1	31.7	47.4	28.6	48.2	37.5
			2000	40	50.6	40.1	53.1	49.9	64.4	36.5	65.1	46.1	79.6	42.1	80.3	51.7
				45	37.5	34.1	42.1	42.1	50.1	30.6	50.9	40.2	65.7	36.5	66.4	46.2
				50	26.3	26.3	34.3	34.3	34.4	24.5	37.3	34.3	50.1	30.7	51.0	40.4
			2200	40	53.1	42.8	56.0	53.3	67.5	38.7	68.2	49.1	83.2	44.5	84.0	54.9
				45	39.6	36.5	45.0	45.0	52.5	32.5	53.4	43.0	68.7	38.8	69.5	49.2
				50	28.1	28.1	36.6	36.6	36.1	26.2	39.4	36.7	52.4	32.7	53.6	43.2
30	5/8	1 1/8	2600	40	80.2	59.7	81.7	72.7	100.6	55.4	101.7	68.4	123.3	63.5	124.2	76.5
				45	60.4	50.7	65.5	64.0	80.5	46.7	81.6	59.7	103.4	55.4	104.5	68.3
				50	42.7	41.8	51.9	51.9	58.3	37.8	60.2	50.9	81.4	46.8	82.4	59.8
			2800	40	83.7	62.9	85.4	76.7	104.7	58.1	105.9	71.8	128.2	66.5	129.2	80.2
				45	63.1	53.6	68.8	67.5	83.9	49.1	85.0	62.9	107.7	58.1	108.7	71.9
				50	44.9	44.2	54.8	54.8	60.7	39.9	62.9	53.8	84.7	49.2	85.8	63.0
			3000	40	86.9	65.9	88.8	80.5	108.7	60.6	109.8	75.2	132.8	69.3	133.8	83.8
				45	65.6	56.3	71.9	71.0	87.0	51.4	88.2	66.0	111.6	60.7	112.7	75.3
				50	47.0	46.5	57.6	57.6	63.0	41.9	65.4	56.6	87.8	51.6	89.0	66.2
			3200	40	89.9	68.8	92.0	84.2	112.4	63.0	113.5	78.4	136.8	72.0	138.1	87.3
				45	68.0	59.0	74.9	74.3	90.0	53.6	91.2	69.0	115.3	63.2	116.4	78.5
				50	49.0	48.7	60.3	60.3	65.2	43.8	67.8	59.3	90.8	53.8	92.0	69.2
40	7/8	1 1/8	3600	40	108.8	81.9	111.1	99.8	136.0	75.6	137.4	93.5	116.2	86.4	167.3	104.2
				45	82.3	70.0	89.7	88.1	109.3	64.2	110.6	82.0	139.9	75.7	141.2	93.5
				50	58.8	57.9	71.6	71.6	79.4	52.2	82.2	70.3	110.4	64.3	111.8	82.2
			3800	40	112.1	85.0	114.5	103.7	140.1	78.2	141.3	96.8	170.7	89.2	172.1	107.8
				45	84.9	72.8	92.6	91.6	112.5	66.5	113.9	85.2	143.9	78.3	145.2	97.0
				50	60.9	60.2	74.4	74.4	81.7	54.2	84.7	73.1	113.6	66.7	115.0	85.4
			4000	40	115.2	88.0	117.8	107.5	143.8	80.7	145.1	100.1	174.8	92.0	176.3	111.4
				45	87.4	75.5	96.0	95.0	115.5	68.7	117.0	88.2	147.6	80.9	149.0	100.3
				50	63.0	62.5	77.2	77.2	83.9	56.2	87.2	75.9	116.6	69.0	118.1	88.5
			4200	40	118.2	90.9	121.0	111.2	147.3	83.0	148.7	103.3	178.9	94.6	180.4	114.8
				45	89.8	78.1	99.0	98.3	118.4	70.9	119.9	91.2	151.2	83.3	152.7	103.6
				50	65.0	64.7	79.9	79.9	86.1	58.1	89.5	78.6	119.5	71.2	121.1	91.5

LEGEND

db — Dry Bulb
wb — Wet Bulb
SH — Sensible
TH — Total Heat

*Capacity based on R-22 refrigerant at 105 F liquid temperature and 10 degrees F superheat.

DIRECT EXPANSION (DX) BASE COOLING CAPACITIES* (MBtuh) (cont)
6-ROW COIL

UNIT SIZE 42BH	CONNECTION SIZE (in.)		CFM	R-22 SUCTION TEMP (F)	ENTERING AIR TEMPERATURE (F) — db/wb											
					75/63		80/63		75/67		80/67		80/71		85/71	
	Liquid	Suction			TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
08	3/8	5/8	600	40	21.3	15.4	21.8	18.8	26.6	14.3	26.8	17.6	32.3	16.3	32.4	19.6
				45	16.3	13.2	17.5	16.7	21.6	12.2	21.8	15.5	27.5	14.4	27.7	17.7
				50	11.4	10.9	13.5	13.5	15.8	9.8	16.4	13.2	22.0	12.2	22.2	15.5
			800	40	25.0	19.1	25.8	23.5	30.9	17.2	31.0	21.5	37.0	19.5	37.2	23.7
				45	19.4	16.5	21.3	21.0	25.2	14.9	25.6	19.2	31.9	17.4	32.1	21.7
				50	14.1	13.8	17.0	17.0	18.5	12.2	19.5	16.7	25.7	15.0	26.1	19.4
			900	40	26.5	20.7	27.6	25.6	32.5	18.5	32.7	23.3	38.9	20.8	39.1	25.6
				45	20.8	18.1	23.1	22.9	26.7	16.1	27.1	20.9	33.7	18.7	33.9	23.5
				50	15.3	15.2	18.5	18.5	19.7	13.3	20.9	18.3	27.1	16.3	27.6	21.1
12	1/2	7/8	1000	40	39.0	27.4	39.4	32.9	48.6	25.9	48.9	31.4	59.0	29.6	59.3	35.1
				45	30.0	23.3	31.4	29.0	39.7	21.9	40.0	27.4	50.4	25.9	50.7	31.4
				50	21.1	19.2	23.8	23.8	29.7	17.7	30.3	23.3	40.6	21.9	41.0	27.4
			1200	40	43.7	31.5	44.3	38.0	54.1	29.4	54.6	35.8	65.6	33.4	65.9	39.8
				45	33.8	26.9	35.7	33.7	44.4	25.1	44.9	31.5	56.0	29.5	56.6	35.9
				50	24.0	22.4	27.7	27.7	33.1	20.5	34.0	27.0	45.3	25.1	45.8	31.6
			1300	40	45.9	33.4	46.5	40.4	56.6	31.0	57.1	37.9	68.4	35.1	68.7	42.0
				45	35.5	28.7	37.6	35.9	46.5	26.5	47.0	33.5	58.6	31.1	59.2	38.0
				50	25.4	24.0	29.6	29.6	34.9	21.8	35.7	28.8	47.4	26.6	47.9	33.5
16	5/8	7/8	1400	40	52.8	37.6	53.5	45.3	65.9	35.4	66.3	43.1	80.1	40.5	80.5	48.1
				45	40.5	32.0	42.7	40.0	53.6	30.0	54.1	37.6	68.1	35.4	68.7	43.1
				50	28.5	26.5	32.7	32.7	39.7	24.3	40.7	32.0	54.6	39.0	55.2	37.6
			1600	40	57.3	41.6	58.3	50.3	71.1	38.8	71.7	47.4	86.3	44.1	86.8	52.7
				45	44.1	35.6	46.9	44.6	58.1	33.0	58.7	41.7	73.6	38.9	74.2	47.5
				50	31.3	29.6	36.5	36.5	43.1	26.9	44.3	35.7	59.2	33.1	59.7	41.7
			1800	40	61.4	45.3	62.6	55.0	75.9	41.9	76.6	51.4	91.8	47.5	92.3	57.0
				45	47.4	39.0	50.8	49.0	62.1	35.9	62.7	45.5	78.4	42.0	79.2	51.6
				50	34.0	32.6	40.1	40.1	46.2	29.4	47.6	39.2	63.2	36.0	63.8	45.6
20	5/8	7/8	1800	40	64.7	46.9	65.7	56.8	80.0	43.6	80.6	53.3	96.6	49.4	97.0	59.1
				45	50.2	40.3	53.1	50.5	65.8	37.3	66.4	47.1	82.9	43.7	83.6	53.4
				50	35.7	33.6	41.5	41.5	49.3	30.6	50.5	40.5	67.2	37.4	67.8	47.2
			2000	40	68.7	50.6	70.0	61.5	84.6	46.6	85.3	57.3	101.9	52.7	102.4	63.3
				45	53.5	43.7	57.1	54.9	69.8	40.2	70.4	50.9	87.7	46.9	88.4	57.5
				50	38.5	36.7	45.1	45.1	52.4	33.1	53.8	44.0	71.2	40.4	71.9	51.1
			2200	40	72.3	54.2	74.0	66.0	89.0	49.4	89.6	61.1	106.7	55.7	107.2	67.3
				45	56.5	47.0	60.8	59.1	73.4	42.8	74.1	54.5	92.1	49.8	92.8	61.4
				50	41.1	36.9	48.5	48.5	55.2	35.5	56.9	47.4	74.8	43.1	75.6	54.8
30	5/8	1 1/8	2600	40	101.1	71.9	102.4	86.2	126.1	68.1	126.9	82.3	153.4	77.9	154.2	92.1
				45	77.7	61.1	81.6	76.0	102.7	57.7	103.6	71.9	130.6	68.0	131.4	82.2
				50	54.7	50.6	62.5	62.5	76.3	46.8	78.1	61.2	104.7	57.6	105.7	71.8
			2800	40	106.0	76.1	107.4	91.4	132.0	71.7	132.9	86.9	160.3	81.8	161.1	97.0
				45	81.6	64.9	86.0	80.8	107.5	60.9	108.5	76.1	136.2	71.7	137.5	86.8
				50	57.7	53.9	66.4	66.4	80.0	49.5	81.9	65.0	109.5	60.8	110.6	76.0
			3000	40	110.6	80.1	112.2	96.4	137.2	75.1	138.4	91.2	166.7	85.5	167.6	101.6
				45	85.2	68.5	90.2	85.4	112.1	63.9	113.2	80.1	141.8	75.2	143.2	91.3
				50	60.5	57.0	70.1	70.1	83.4	52.2	85.5	68.6	114.1	64.0	115.2	80.2
			3200	40	115.0	83.9	116.8	101.3	142.4	78.4	143.7	95.5	172.7	89.0	173.7	106.1
				45	88.7	72.0	94.2	89.9	116.4	66.9	117.6	84.0	147.1	78.5	148.5	95.6
				50	63.3	60.1	73.8	73.8	86.6	54.7	89.0	72.2	118.4	67.0	119.6	84.1
40	7/8	1 1/8	3600	40	136.5	98.3	138.2	118.0	168.6	92.0	169.6	111.5	203.1	104.1	203.9	123.6
				45	106.5	84.5	111.8	104.9	139.0	78.9	140.2	98.5	174.5	92.3	176.0	111.7
				50	76.2	70.7	86.8	86.8	105.0	64.9	107.3	84.8	142.1	79.1	143.3	98.7
			3800	40	141.0	102.2	142.8	123.0	173.5	95.3	174.9	115.8	209.0	107.7	210.0	128.2
				45	110.1	88.1	115.9	109.5	143.5	82.0	144.7	102.5	179.8	95.6	181.4	116.1
				50	79.0	73.9	90.7	90.7	108.4	67.6	110.9	88.4	146.6	82.2	147.9	102.8
			4000	40	145.2	106.1	147.3	127.8	178.5	98.5	179.9	119.9	214.7	111.1	215.7	132.5
				45	113.6	91.6	119.9	114.1	147.7	84.9	149.0	106.4	184.9	98.9	186.5	120.3
				50	81.8	77.0	94.4	94.4	111.7	70.2	114.4	92.0	150.8	85.2	152.2	106.8
			4200	40	149.2	109.8	151.7	132.6	183.2	101.6	184.6	123.9	220.0	114.3	221.0	136.8
				45	116.9	95.1	123.8	118.5	151.8	87.7	153.1	110.3	189.7	102.0	191.4	124.4
				50	84.5	80.1	98.1	98.1	114.9	72.7	117.7	95.6	154.9	88.1	156.3	110.7

LEGEND

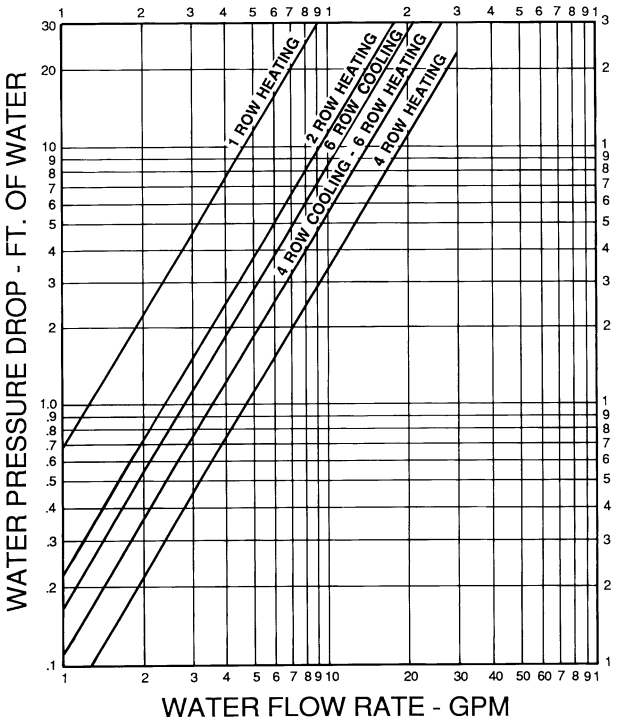
db — Dry Bulb
wb — Wet Bulb
SH — Sensible
TH — Total Heat

*Capacity based on R-22 refrigerant at 105 F liquid temperature and 10 degrees F superheat.

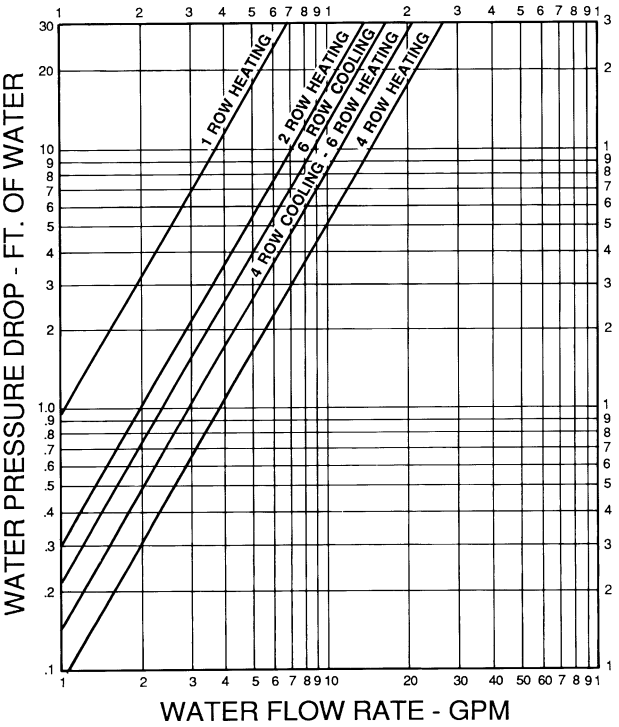
Performance data (cont)

42BH WATER PRESSURE DROP

SIZE 08

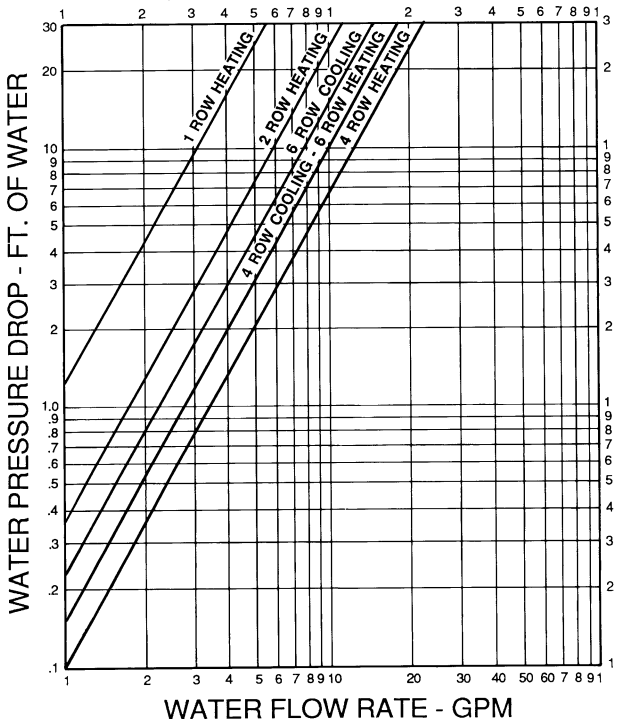

1 ROW HEATING
2 ROW HEATING
6 ROW COOLING
6 ROW HEATING
4 ROW COOLING - 6 ROW HEATING
4 ROW HEATING
WATER PRESSURE DROP - FT. OF WATER
WATER FLOW RATE - GPM

SIZE 12

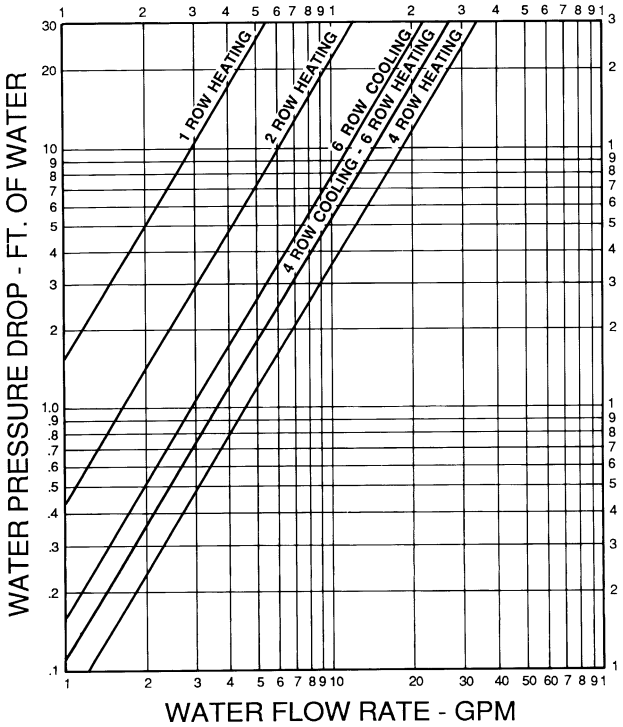

1 ROW HEATING
2 ROW HEATING
6 ROW COOLING
6 ROW HEATING
4 ROW COOLING - 6 ROW HEATING
4 ROW HEATING
WATER PRESSURE DROP - FT. OF WATER
WATER FLOW RATE - GPM

42BH WATER PRESSURE DROP (cont)

SIZE 16


WATER PRESSURE DROP - FT. OF WATER
WATER FLOW RATE - GPM
1 ROW HEATING
2 ROW HEATING
6 ROW COOLING
6 ROW HEATING
4 ROW COOLING - 6 ROW HEATING
4 ROW HEATING

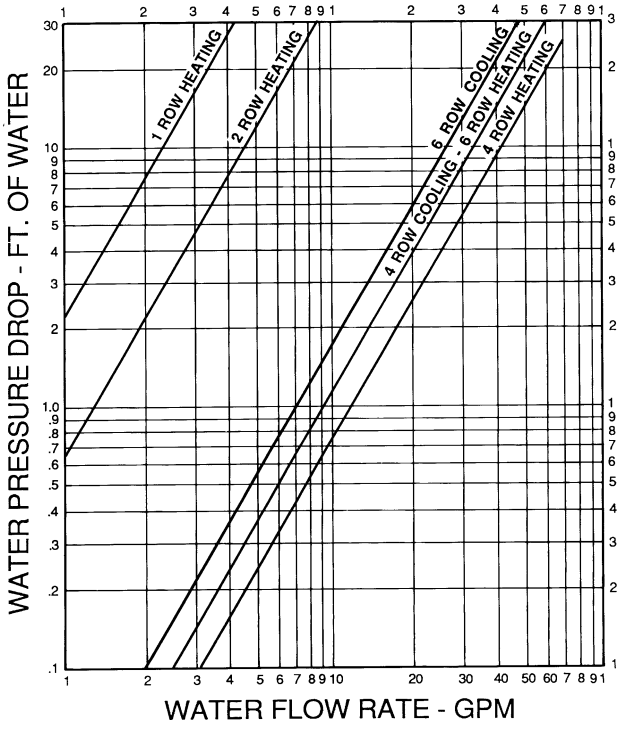
SIZE 20


WATER PRESSURE DROP - FT. OF WATER
WATER FLOW RATE - GPM
1 ROW HEATING
2 ROW HEATING
6 ROW COOLING
6 ROW HEATING
4 ROW COOLING - 6 ROW HEATING
4 ROW HEATING

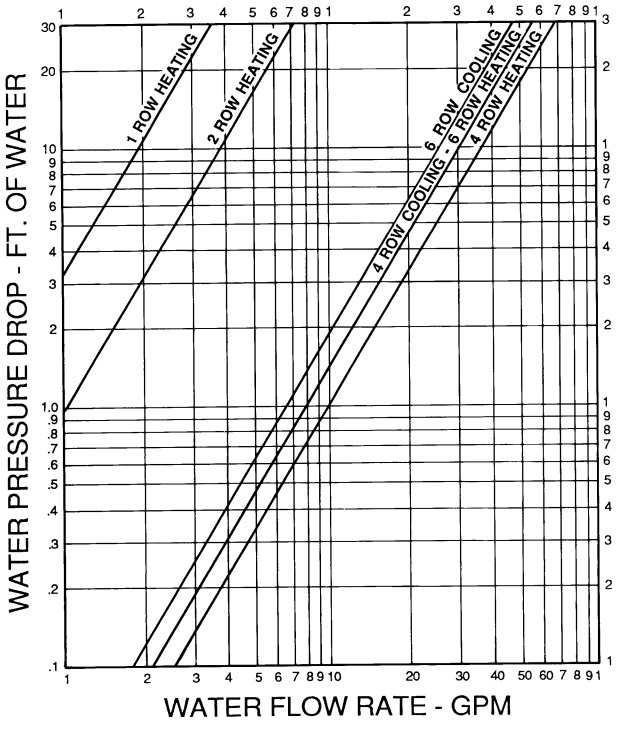
Performance data (cont)

42BH WATER PRESSURE DROP (cont)

SIZE 30



SIZE 40



ENTHALPY AT SATURATION

TEMPERATURE (F)	ENTHALPY AT SATURATION (Btu per lb of dry air)	TEMPERATURE (F)	ENTHALPY AT SATURATION (Btu per lb of dry air)
40	15.230	**60**	26.46
41	15.697	**61**	27.15
42	16.172	**62**	27.85
43	16.657	**63**	28.57
44	17.149	**64**	29.31
45	17.650	**65**	30.06
46	18.161	**66**	30.83
47	18.680	**67**	31.62
48	19.211	**68**	32.42
49	19.751	**69**	33.25
50	20.301	**70**	34.09
51	20.862	**71**	34.95
52	21.436	**72**	35.83
53	22.020	**73**	36.74
54	22.615	**74**	37.66
55	23.22	**75**	38.61
56	23.84	**76**	39.57
57	24.48	**77**	40.57
58	25.12	**78**	41.58
59	25.78	**79**	42.62
		80	43.69

42BH COMPONENT STATIC RESISTANCE (in. wg)

UNIT SIZE 42BH	CFM	COOLING COIL		HEATING COIL				FILTER	
		4 Row	6 Row	1 Row	2 Row	4 Row	6 Row	TA	Perm
08	600	.20	.30	.05	.09	.17	.25	.03	.05
	700	.26	.38	.06	.11	.22	.32	.04	.06
	800	.32	.47	.07	.14	.27	.41	.05	.08
	900	.39	.57	.09	.17	.33	.49	.06	.11
	1000	.46	.67	.11	.20	.39	.59	.07	.15
12	1000	.25	.38	.06	.11	.21	.31	.04	.06
	1100	.30	.44	.07	.13	.25	.37	.04	.07
	1200	.34	.51	.08	.15	.29	.42	.05	.09
	1300	.39	.57	.09	.17	.33	.49	.06	.11
	1400	.44	.64	.10	.19	.37	.55	.06	.14
16	1400	.27	.40	.06	.12	.23	.34	.04	.06
	1500	.30	.45	.07	.13	.25	.38	.04	.07
	1600	.34	.49	.08	.14	.28	.42	.05	.08
	1700	.37	.54	.09	.16	.31	.46	.05	.10
	1800	.41	.59	.10	.18	.34	.51	.06	.12
20	1800	.31	.45	.07	.13	.25	.38	.04	.07
	1900	.33	.49	.08	.14	.28	.41	.05	.08
	2000	.36	.54	.08	.16	.30	.45	.05	.09
	2100	.39	.58	.09	.17	.33	.49	.06	.11
	2200	.42	.62	.10	.18	.35	.53	.06	.13
	2400	.49	.71	.11	.21	.41	.61	.07	.16
30	2400	.23	.34	.05	.10	.19	.29	.03	.05
	2600	.27	.39	.06	.11	.22	.33	.04	.06
	2800	.30	.44	.07	.13	.25	.37	.04	.07
	3000	.33	.50	.08	.14	.28	.42	.05	.08
	3200	.37	.54	.09	.16	.31	.47	.05	.10
	3400	.41	.60	.09	.18	.35	.52	.06	.12
40	3400	.25	.37	.06	.11	.21	.31	.04	.06
	3600	.28	.41	.06	.12	.23	.34	.04	.06
	3800	.30	.44	.07	.13	.25	.37	.04	.07
	4000	.33	.48	.08	.14	.27	.41	.05	.08
	4200	.35	.52	.08	.15	.30	.44	.05	.09
	4400	.38	.56	.09	.16	.32	.48	.06	.11

LEGEND

DB — Dry Bulb
EWT — Entering Water Temperature
TA — Throw Away
WB — Wet Bulb

NOTES:
1. Cooling coil values are based on 80 F DB and 67 F WB at 45 F EWT.
2. Heating coil values are based on dry coil conditions.
3. Filter values are based on initial clean resistance for one-inch thick media.

Performance data (cont)

42BH FAN PERFORMANCE

UNIT SIZE 42BH	CFM	TOTAL STATIC PRESSURE (0.5 to 1.2 in. wg)															
		0.5		0.6		0.7		0.8		0.9		1.0		1.1		1.2	
		Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp
08	600	815	1/4	880	1/4	942	1/4	1000	1/4	1055	1/4	1108	1/4	1159	1/4	1208	1/3
	700	842	1/4	903	1/4	962	1/4	1018	1/4	1071	1/4	1123	1/4	1172	1/3	1220	1/3
	800	874	1/4	932	1/4	988	1/4	1041	1/4	1092*	1/4	1142	1/3	1190	1/3	1236	1/3
	900	910	1/4	965	1/4	1018*	1/4	1069	1/3	1118	1/3	1165	1/3	1211	1/2	1256	1/2
	1000	951	1/4	1003	1/3	1053	1/3	1101	1/3	1148	1/2	1193	1/2	1237	1/2	1280	1/2
12	1000	845	1/4	907	1/4	966	1/4	1023	1/3	1078	1/3	1130	1/3	1182	1/2	1247	1/2
	1100	868	1/4	927	1/4	984	1/3	1038	1/3	1090	1/3	1141	1/2	1191	1/2	1239	1/2
	1200	894*	1/4	950	1/3	1004	1/3	1056	1/2	1107	1/2	1156	1/2	1203	1/2	1250	1/2
	1300	921	1/3	975	1/3	1027	1/2	1077	1/2	1126	1/2	1173	1/2	1219	1/2	1264	3/4
	1400	951	1/3	1002	1/2	1052	1/2	1100	1/2	1147	1/2	1193	1/2	1237	3/4	1280	3/4
16	1400	NA		780	1/2	820	1/2	875	1/2	940	1/2	1000	3/4	1025	3/4	1075	3/4
	1500	NA		800	1/2	845	1/2	895	1/2	950	3/4	1000	3/4	1040	3/4	1085	3/4
	1600	NA		800	1/2	850	1/2	900	3/4	950	3/4	1000	3/4	1035	3/4	1080	3/4
	1700	NA		800	3/4	850	3/4	900	3/4	950	3/4	1000	3/4	1040	3/4	1080	1
	1800	NA		825	3/4	880	3/4	910	3/4	965	3/4	1010	3/4	1040	1	1090	1
20	1800	NA		625	1/2	665	1/2	710	1/2	760	1/2	800	3/4	840	3/4	880	3/4
	1900	NA		630	1/2	665	1/2	710	1/2	760	1/2	800	3/4	840	3/4	880	3/4
	2000	NA		630	1/2	670	1/2	710	1/2	760	3/4	800	3/4	840	3/4	875	3/4
	2100	NA		635	1/2	670	1/2	710	3/4	760	3/4	800	3/4	835	3/4	875	3/4
	2200	NA		640	1/2	680	3/4	720	3/4	760	3/4	800	3/4	840	3/4	875	1
	2400	NA		645	3/4	680	3/4	720	3/4	760	3/4	800	3/4	840	1	875	1
30	2400	NA		NA		550	1/2	595	3/4	630	3/4	665	3/4	700	3/4	735	1
	2600	NA		NA		560	3/4	595	3/4	635	3/4	665	3/4	700	1	735	1
	2800	NA		NA		560	3/4	595	3/4	630	3/4	665	1	700	1	730	1
	3000	NA		NA		560	3/4	595	3/4	630	1	665	1	700	1	730	1
	3200	NA		NA		565	3/4	600	1	635	1	665	1	700	1	730	1 1/2
	3400	NA		NA		570	1	600	1	635	1	665	1	700	1 1/2	730	1 1/2
40	3400	NA		NA		760	1 1/2	785	1 1/2	820	1 1/2	850	1 1/2	875	1 1/2	910	1 1/2
	3600	NA		NA		770	1 1/2	800	1 1/2	825	1 1/2	850	1 1/2	880	2	920	2
	3800	NA		NA		780	1 1/2	810	1 1/2	840	1 1/2	865	2	900	2	930	2
	4000	NA		NA		800	2	830	2	860	2	880	2	915	2	945	2
	4200	NA		NA		820	2	845	2	880	2	910	2	935	3	960	3
	4400	NA		NA		850	2	875	2	900	3	925	3	950	3	975	3

UNIT SIZE 42BH	CFM	TOTAL STATIC PRESSURE (1.3 to 2.0 in. wg)															
		1.3		1.4		1.5		1.6		1.7		1.8		1.9		2.0	
		Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp	Rpm	Hp
08	600	1255	1/3	1302	1/3	1348	1/3	1392	1/2	1435	1/2	1477	1/2	1518	1/2	1558	1/2
	700	1266	1/3	1310	1/3	1353	1/2	1395	1/2	1436	1/2	1477	1/2	1517	1/2	1556	1/2
	800	1280	1/2	1324	1/2	1366	1/2	1407	1/2	1447	1/2	1486	1/2	1524	3/4	1562	3/4
	900	1299	1/2	1341	1/2	1382	1/2	1423	1/2	1462	3/4	1500	3/4	1537	3/4	1574	3/4
	1000	1322	1/2	1363	1/2	1403	3/4	1442	3/4	1480	3/4	1517	3/4	1554	3/4	1590	3/4
12	1000	1298	1/2	1348	1/2	1396	1/2	1443	3/4	1489	3/4	1538	3/4	1577	3/4	1619	3/4
	1100	1285	1/2	1347	1/2	1394	3/4	1440	3/4	1485	3/4	1529	3/4	1572	3/4	1614	3/4
	1200	1295	3/4	1339	3/4	1382	3/4	1425	3/4	1484	3/4	1527	3/4	1569	3/4	1611	1
	1300	1307	3/4	1350	3/4	1392	3/4	1433	3/4	1474	3/4	1513	3/4	1552	1	1610	1
	1400	1323	3/4	1364	3/4	1405	3/4	1445	3/4	1484	3/4	1522	1	1560	1	1597	1
16	1400	1120	3/4	1160	3/4	1200	3/4	1250	3/4	1290	1	1325	1	1350	1	1400	1
	1500	1125	3/4	1165	3/4	1200	1	1235	1	1275	1	1320	1	1360	1	1400	1
	1600	1120	3/4	1170	1	1200	1	1240	1	1270	1	1310	1	1350	1 1/2	1390	1 1/2
	1700	1125	1	1165	1	1200	1	1240	1	1275	1 1/2	1310	1 1/2	1350	1 1/2	1390	1 1/2
	1800	1130	1	1170	1	1210	1	1250	1 1/2	1280	1 1/2	1320	1 1/2	1350	1 1/2	1390	1 1/2
20	1800	920	3/4	960	3/4	1000	1	1030	1	1070	1	1100	1	1130	1	1170	1 1/2
	1900	920	3/4	960	3/4	1000	1	1030	1	1070	1	1100	1	1140	1 1/2	1175	1 1/2
	2000	920	3/4	955	1	990	1	1025	1	1060	1	1095	1	1130	1 1/2	1160	1 1/2
	2100	915	1	950	1	985	1	1020	1	1045	1	1080	1 1/2	1115	1 1/2	1145	1 1/2
	2200	915	1	950	1	985	1	1020	1	1055	1 1/2	1080	1 1/2	1120	1 1/2	1150	1 1/2
	2400	915	1	950	1	980	1 1/2	1015	1 1/2	1060	1 1/2	1080	1 1/2	1120	1 1/2	1140	1 1/2
30	2400	770	1	800	1	835	1 1/2	870	1 1/2	895	1 1/2	925	1 1/2	950	1 1/2	980	1 1/2
	2600	770	1	795	1	835	1 1/2	865	1 1/2	890	1 1/2	920	1 1/2	945	1 1/2	970	1 1/2
	2800	760	1	785	1 1/2	820	1 1/2	850	1 1/2	875	1 1/2	905	1 1/2	935	1 1/2	960	2
	3000	760	1 1/2	785	1 1/2	820	1 1/2	845	1 1/2	870	1 1/2	900	1 1/2	925	2	950	2
	3200	760	1 1/2	785	1 1/2	830	1 1/2	840	1 1/2	870	1 1/2	895	2	925	2	950	2
	3400	760	1 1/2	785	1 1/2	830	1 1/2	840	1 1/2	870	2	890	2	925	2	950	2
40	3400	940	1 1/2	970	2	1000	2	1025	2	1050	2	1080	2	1110	2	1135	2
	3600	950	2	975	2	1010	2	1045	2	1075	2	1090	3	1120	3	1145	3
	3800	965	2	990	2	1020	2	1050	3	1075	3	1100	3	1125	3	1145	3
	4000	975	3	1000	3	1030	3	1055	3	1080	3	1105	3	1130	3	1150	3
	4200	985	3	1010	3	1040	3	1065	3	1090	3	1120	3	1145	3	1170	3
	4400	1000	3	1025	3	1050	3	1075	3	1100	3	1125	3	1150	3	1175	3

NA — Application not available.

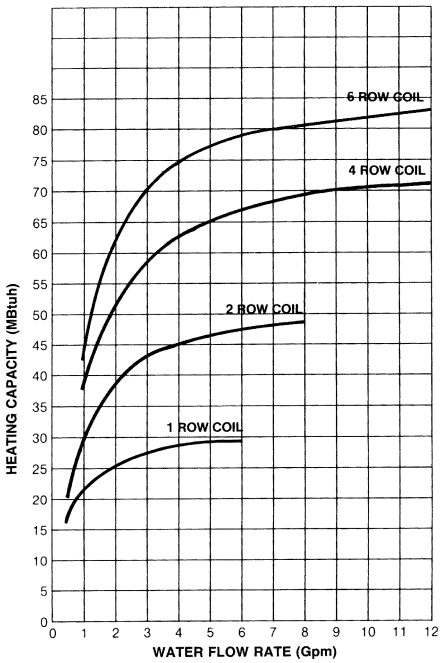
1500 — Shaded application available in 60 Hz only.

*For 50 Hz units these motor HP's are one size larger.

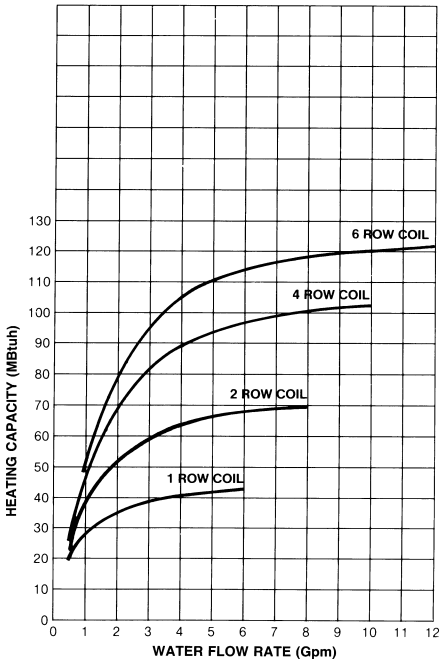
NOTES:
1. The rpm's shown for fan/blower are mid-range reference values for factory-furnished drives. The appropriate drive for 50 Hz or 60 Hz motor will be selected at the factory.
2. Contact factory if higher horsepower selection is required for a given cfm and total static pressure.
3. The variable pitch motor sheave will allow an approximate ± 15% rpm adjustment from mid-range value. Unit sizes 08, 12, and 16 have 3/4-in. bore fan sheaves. Unit sizes 20, 30, and 40 have one-in. bore fan sheaves.
4. Consult factory for motor selections when outlet air temperature exceeds 104 F.
5. Single-phase motors are only available to one hp. Three-phase motors are available from 1/3 to 3 hp.

HEATING CAPACITY CURVES

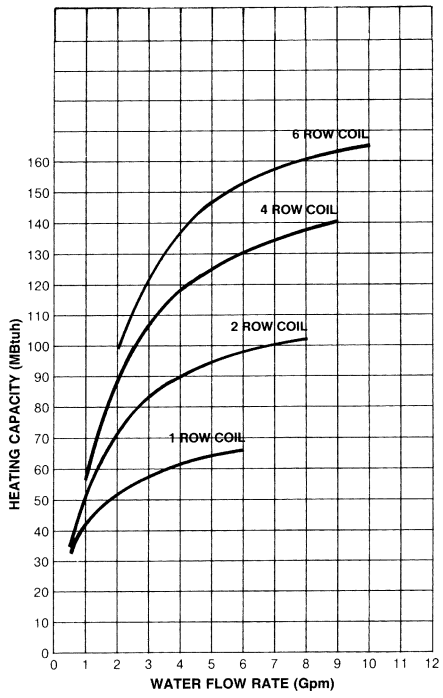
42BH08



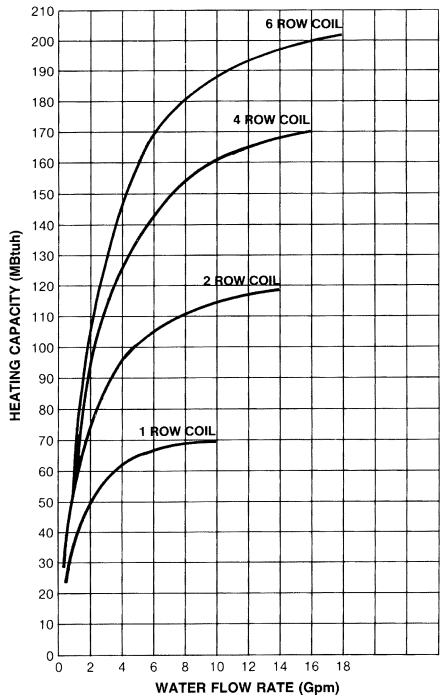
42BH12



42BH16



42BH20



IMPORTANT

Unit 42BH standard motors are rated for a maximum ambient air temperature of 104 F when fully loaded.

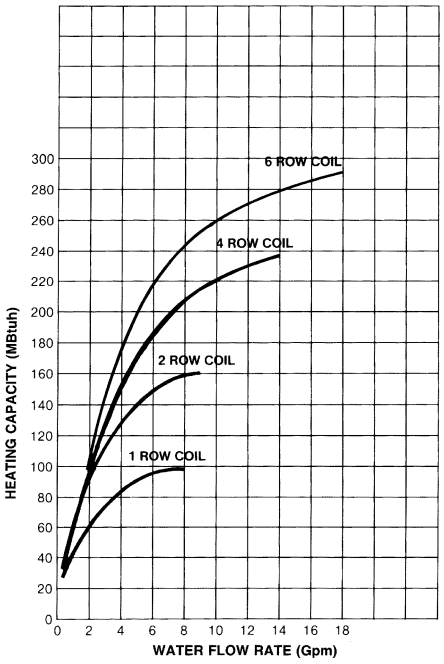
Since these are draw-through units, *it will be necessary to calculate the air temperature leaving the coil for all heating applications. If this temperature exceeds 104 F, consult your Carrier representative to determine availability and price of special units.*

$$\text{Leaving Air Temp} = \frac{\text{MBtuh x 1000}}{\text{1.08 x Cfm}} + \text{Ent Air Temp}$$

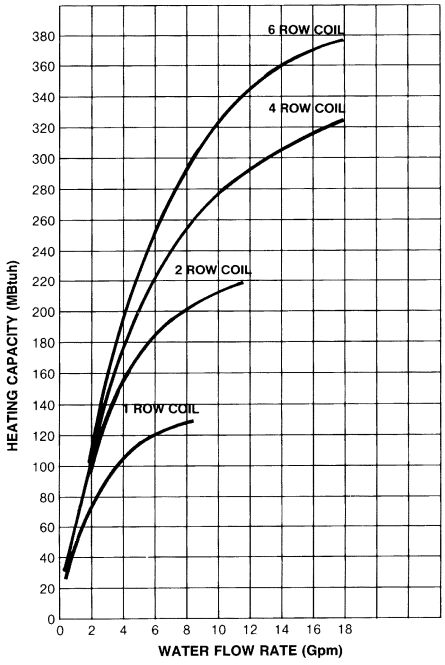
Performance data (cont)

HEATING CAPACITY CURVES (cont)

42BH30



42BH40



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Electrical data

60 Hz SINGLE-PHASE MOTORS (1750 Rpm)

HORSEPOWER	VOLTAGE			
	115	208	230	277
1/4	5.8	3.2	2.9	2.1
1/3	7.2	4.0	3.6	2.5
1/2	9.8	5.4	4.9	3.6
3/4	13.8	7.6	6.9	5.1
1	16.0	8.8	8.0	5.4

60 Hz THREE-PHASE MOTORS (1750 Rpm)

HORSEPOWER	VOLTAGE		
	208	230	460
1/3	1.8	1.6	0.8
1/2	2.2	2.0	1.0
3/4	3.1	2.8	1.4
1	4.0	3.6	1.8
1 1/2	5.7	5.2	2.6
2	7.5	6.8	3.4
3	10.6	9.6	4.8

50 Hz SINGLE-PHASE MOTORS (1425 Rpm)

HORSEPOWER	VOLTAGE	
	110	220
1/3	6.4	3.2
1/2	8.4	4.4
3/4	13.0	6.5
1	15.0	7.5

50 Hz THREE-PHASE MOTORS (1425 Rpm)

HORSEPOWER	VOLTAGE	
	190	380
1/3	1.8	0.9
1/2	2.8	1.4
3/4	3.2	1.6
1	4.0	2.0
1 1/2	5.6	2.8
2	7.2	3.6

NOTES:
1. Motor full load amps listed refer to NEC (National Electrical Code) amps. Actual motor nameplate amps may vary.
2. Belt drive motors are open drip-proof, ball bearing, single-speed, 1750 rpm (60 Hz) or 1425 rpm (50 Hz), rated at continuous duty, 40 C (104 F) ambient, with reversible rotation.
3. Standard single-phase motors are resilient base, capacitor start and include built-in thermal overload protection.
4. Standard 3-phase motors are rigid base and have no overload protection.

Guide specifications

Fan Coil Unit
Horizontal Cabinet Model, Ducted

HVAC Guide Specifications

Size Range: **800 to 4000 Nominal Cfm**
Carrier Model Number: **42BH**

Part 1 — General

1.01 SYSTEM DESCRIPTION

Horizontal, 2-pipe or 4-pipe, belt-driven, galvanized casing model fan coil unit for ducted installation above the ceiling, with full access to internal components.

1.02 QUALITY ASSURANCE

Each coil shall be factory tested for leakage at 350 psig air pressure with coil submerged in water. Insulation and adhesive shall meet NFPA-90A requirements for flame spread and smoke generation. Factory-installed motors shall be UL approved.

1.03 DELIVERY, STORAGE AND HANDLING

Unit shall be handled and stored in accordance with the manufacturer's instructions.

Part 2 — Products

2.01 EQUIPMENT

A. General:

Factory-assembled, horizontal, draw-thru type fan coil unit for ducted installation above the ceiling. Unit shall be complete with water coils, fan(s), motor, belt drive, drain pan, and filter.

B. Casing:

Construction shall be heavy-gage galvanized steel, lined with one-in. thick fiberglass thermal/acoustical insulation. Supply and return duct connection shall be one in. thick and 2 in. long, respectively. Removable side panels shall be provided for access to the fan/motor assembly. Drain pan shall be constructed of galvanized steel, extending under the full length and width of the coil(s) and pitched for positive drainage. The inside surface of the drain pan shall be coated with closed cell fire-retardant, foam insulation.

C. Fans:

Belt-driven, double-width fan wheels shall have forward-curved blades and be statically and dynamically balanced. Fan drive shall consist of variable-pitch motor pulley, fixed-pitch fan pulley and V-belt. Fans and scrolls shall be of galvanized steel.

D. Coils:

Standard unit shall be equipped with a 4-row coil for installation in a 2-pipe system and additional rows of coil shall be provided for installation in a 4-pipe system as described in the Special Features section. Coils shall have $1/2$-in. copper tubes, aluminum fins bonded to the tubes by mechanical expansion and have a working pressure of 250 psig. Each coil shall have a manual air vent and sweat connections for copper tubes.

E. Operating Characteristics:

A single-circuit coil unit installed in a 2-pipe system shall be capable of providing heating or cooling as determined by the operating mode of the central water supply system. A double-circuit coil unit installed in a 4-pipe system shall be capable of providing sequenced heating and cooling.

F. Motor(s):

Fan motors shall be open, drip-proof, single-speed, 60 Hz, 1750 rpm or 50 Hz, 1425 rpm, either single or 3-phase, suitable for continuous duty at 104 F (40 C). Single-phase motors are capacitor start resilient base mounted, include automatic reset thermal overload protection and are available in 115, 208, 230, or 277 volts (60 Hz) or 110 or 220 volts (50 Hz). Three-phase motors are rigid base mounted and are available in 208, 230, or 460 volts (60 Hz) or 190 or 380 volts (50 Hz).

G. Special Features:

Certain standard features are not applicable when the features designated by * are specified. See your local Carrier Sales Office for amending specifications.

* 1. Coils:

a. Unit coil(s) shall be equipped with automatic air vent(s).

b. Unit shall be equipped with a high-capacity 6-row coil for installation in a 2-pipe system.

c. For installation in a 4-pipe system, unit shall be equipped with either a 4-row cooling/1-row hot water heating split-circuit coil, or a 4/2, 6/1, or 6/2 split-circuit coil as required.

d. Unit shall be equipped with a 4-row cooling/1-row steam heating or 6-row cooling/1-row steam heating split-circuit coil for installation in a 4-pipe system.

e. Unit shall be equipped with a high-capacity, 6-row cooling/1-row steam heating split-circuit coil for installation in a 4-pipe system.

f. Unit shall be equipped with either a 4-row DX (direct expansion) cooling coil or a 6-row DX cooling coil as required.

g. For installation in a 4-pipe system the unit shall be equipped with either a 4-row DX cooling/1-row heating split-circuit coil or a 4/2, 6/1, or 6/2 split-circuit coil as required.

* 2. Filters:

a. A one-in. permanent filter shall be installed in the unit.

b. Extra one-in. permanent or throwaway filters shall be furnished for field installation as indicated on the equipment schedule.